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Communications and Information

**BASE-LEVEL PLANNING AND
IMPLEMENTATION**

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This Air Force instruction (AFI) implements Air Force Policy Directive (AFPD) 33-1, *Command, Control, Communications, and Computer (C4) Systems* (will become, *Communications and Information Systems*). It provides direction for communications and information systems planners. It outlines standardized management practices and tells how to manage planning and implementation of communications and information systems and the base-level infrastructure. This instruction provides guidance to activities requiring, implementing, and supporting communications and information systems and defines management responsibilities when program acquisition will cost less than \$15 million. See AFPD 10-6, *Mission Needs and Operational Requirements*, and AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*, for programs with acquisition costs of \$15 million or more. Refer recommended changes and conflicts between this and other publications to Headquarter Air Force Communications Agency (HQ AFCA/ITPP), 203 W. Losey Street, Room 1100, Scott AFB IL 62225-5222, using AF Form 847, **Recommendation for Change of Publication**, with an information copy to Headquarters United States Air Force (HQ USAF/SCXX), 1250 Air Force Pentagon, Washington DC 20330-1250. Maintain and dispose of records created as a result of prescribed processes in accordance with Air Force Manual (AFMAN) 37-139, *Records Disposition Schedule* (will convert to AFMAN 33-322V4). The Paperwork Reduction Act of 1974 as amended in 1996 and AFI 33-360, Volume 2, *Forms Management Program*, affect this publication.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This revision reflects the increase in the cost ceiling for communications and information requirements, using the 33-series requirements process, from \$5 million to \$15 million. It also makes several updates in terminology and publication titles. This revision gives equal importance to contract and Air Force organic implementation. Outdated programming processes such as the C4 Systems Directive (CSD) and the C4 Systems Programming Plan (CSPP) have been replaced by nongeneric work plans. This revision

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incorporates the C4 Intelligence Support Plan (C4ISP) process to major command (MAJCOM) and base-level planning. Current project management concepts and business industry practices are included throughout the text and attachments. A new electronic form, with instruction fields, has warranted the elimination of Attachment 9, Instructions for AF Form 1261, **Communications and Information Systems Acceptance Certificate**. This revision reflects the reorganization of communications engineering and installation (EI) resources in the Air Force. Finally, this revision changes all references to the Department of Defense (DoD) Technical Architecture Framework for Information Management (TAFIM) and Air Force Technical Reference Codes (TRC) to the Joint Technical Architecture-Air Force (JTA-AF).

Chapter 1—GENERAL	5
1.1. Scope	5
1.2. Terminology	5
1.3. Need for Communications and Information Systems Planning and Implementation	5
Chapter 2—COMMUNICATIONS AND INFORMATION SYSTEMS BASE-LEVEL PLANNING	6
2.1. Planning Process	6
2.2. User Contacts and Systems Review	7
2.3. Communications and Information System Infrastructure	7
2.4. Communications and Information Systems Shortfalls	8
2.5. Communications and Information Systems Excesses	8
2.6. Plans	8
2.7. Defining the Requirement	9
Chapter 3—COMMUNICATIONS AND INFORMATION SYSTEMS BASE-LEVEL INTEGRATION	11
3.1. Systems Review	11
3.2. Role of the STEM-B	11
3.3. Reviewing Communications and Information Systems	12
3.4. Reviewing Information Assurance (IA)	12
3.5. Procedures for Successful Systems Integration	12
3.6. Integrating Electronic Records Systems	13
3.7. Technical Solutions and Cost Estimates	13
3.8. Base Civil Engineer (BCE) Support and Coordination	14
3.9. Funding and Work Plans	16

AFI33-104 10 May 2001	3
Chapter 4—COMMUNICATIONS AND INFORMATION SYSTEMS IMPLEMENTATION	17
4.1. Program Management Concepts	17
4.2. Program Management Responsibilities	17
4.3. Securing an Incomplete Installation	23
4.4. Control of the Installation Team	23
Chapter 5—INSPECTING, ACCEPTING, AND REMOVING COMMUNICATIONS AND INFORMATION SYSTEMS	24
5.1. Acceptance Inspection	24
5.2. Inspection Documents	24
5.3. System Tests	24
5.4. Installation Exceptions	24
5.5. Using Communications and Information Systems Before Acceptance	25
5.6. Communications and Information Systems Acceptance	25
5.7. Removing Communications and Information Systems	25
Chapter 6—MANAGING COMMUNICATIONS AND INFORMATION SYSTEMS RESOURCES	26
6.1. Financial Management	26
6.2. Agreements Management	27
6.3. Contract Management	28
6.4. Information Collections, Records, and Forms	29
Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION	31
Attachment 2—ARCHITECTURES, TEMPLATES, COMMUNICATIONS AND INFORMATION SYSTEMS BLUEPRINTS, AND THE STEM	48
Attachment 3—COMMUNICATIONS AND INFORMATION SYSTEMS BLUEPRINT DEVELOPMENT, REQUIRED DOCUMENTS, AND CONTENT	51
Attachment 4—FUNDING AND WORK PLAN	54
Attachment 5—PROJECT PLANNING PROCESS	56
Attachment 6—C4ISP AND PSA SUPPORT DOCUMENT INFORMATION	60
Attachment 7—PROJECT MANAGEMENT TASKS	65
Attachment 8—PROJECT MANAGEMENT FUNDAMENTALS	69

Chapter 1

GENERAL

1.1. Scope. This instruction applies to personnel working in base-level communications and information systems planning and implementation functions and those who require, plan, install, modify, relocate, or remove communications and information systems. This instruction provides guidance in standardizing the planning and implementation of communications and information systems into a base-level infrastructure. It also provides procedures critical for day-to-day management of planning, implementation, and resources; and identifies general managerial tasks, applicable references and methods of accomplishment. This instruction refers to implementation using organic Air Force and contracted resources.

1.2. Terminology. The term "communications and information systems planner" refers to base-level planning and implementation personnel. A "base-level communications and information system" is planned, implemented, or installed to satisfy mission requirements within the physical confines of a single air base, MAJCOM headquarters, or other geographic area administered by the Air Force. These systems result from downward directed (which may impact a number of "bases") or upward generated requirements. See [Attachment 1](#) for a glossary of references and supporting information.

1.3. Need for Communications and Information Systems Planning and Implementation. Communications and information systems must adapt to an environment that is constantly changing because of mission tasking, user demands, new technologies, and regulatory changes. Successful planning and implementation of systems require continual user contact and systems review. This planning and implementation focuses on the ability of current and future communications and information systems to support user needs, and on the timely identification, funding, acquisition, and implementation of required resources. These systems begin with planning and evolve through implementation of deliverables on time and within budget. The basic source of communications and information systems planning data is host-base resources. Implementation of planned communications and information systems is at base level. The cyclic nature and extended time span of this process never ends and relies on factual base resources information. The planning and implementation process also relies on sound project/program management principles. See [Attachment 5](#), [Attachment 6](#), and [Attachment 7](#).

Chapter 2

COMMUNICATIONS AND INFORMATION SYSTEMS BASE-LEVEL PLANNING

2.1. Planning Process. Communications and information systems planning examines mission requirements and provides broad goals, strategies, and guidance for developing future capabilities (See AFI 10-1401, *Modernization Planning Documentation* [converting to AFI 90-1101, *Modernization Planning*]). The communications and information systems blueprint is an essential communications and information systems planning and implementation tool developed for this purpose. The communications and information systems planner and Systems Telecommunications Engineering Manager-Base Level (STEM-B) must interact with users and review communications and information systems; examine peacetime and wartime mission taskings; compare potential needs with existing base infrastructure; identify shortfalls and excesses; and integrate communications and information systems to achieve interoperability.

2.1.1. Scope of Planning. Functional mission areas and MAJCOMs use intermediate planning documentation to project their mid- and long-term communications and information systems requirements. Base-level communications and information system planning starts and ends at the base, utilizing these intermediate planning documents. As such, base level planning is an integrated look into the overall Air Force planning and budgeting process.

2.1.2. Cooperating on Communications and Information Systems Planning. The STEM-B serves as communications and information technical advisor to the wing/installation commander and Communications and Information Systems Officer (CSO). Together with the base communications and information systems planner, the base civil engineering community, and the system users, they develop the base Communications and Information Systems Blueprint (see [Attachment 2](#)). Other communications unit sections and base-level activities must coordinate and cooperate in all phases of planning and implementation.

2.1.3. Communications and Information Systems Blueprint. This is a host wing and MAJCOM approved roadmap, investment plan, and work plan that documents each Air Force base's existing and targeted communications and information systems, plans for modernization, and provides a vehicle for implementation. It covers the existing infrastructure baseline, on-going programs and projects, short and long-range planned systems, and identifies requirements and estimated resources required. The base blueprint is the configuration, management and control document for the base infrastructure and any changes to the infrastructure components from the user interface outlet to the service provider's point of presence must be approved by the base CSO in coordination with the STEM-B (see [Attachment 3](#)). The blueprint is under constant review, however the STEM-B will meet at least annually with appropriate base or MAJCOM personnel to include representatives of the operations, support, logistics, medical, intelligence, and communications and information communities. The command level STEM (STEM-C) will establish an annual review cycle with their MAJCOMs. (See AFMAN 33-105, *Engineering and Installation Services*.)

2.1.4. C4ISP. DoD 5000.2-R (Interim), *Mandatory Procedures for Major Defense Acquisition Programs (MDAP) and Major Automated Information Systems (MAIS) Acquisition Programs*, January 4, 2001 and Air Force C4ISP policy mandates C4ISP development. The C4ISP is an acquisition document developed for new and modified systems to ensure that necessary C4I support is planned and provided. C4ISP development early in the system life cycle increases the probability of efficient and effective fielding of systems. The C4ISP is updated and reviewed prior to each milestone or equivalent.

lent event/activity, according to the Air Force C4ISP Guide (<http://www.afca.scott.af.mil/c4isp>). Purpose for base-level review of the C4ISP by STEMs and system planners is two-fold. First, STEM and systems planners provide infrastructure assessment to the program. Second, the C4ISP provides information on upcoming systems for inclusion in blueprints and use in infrastructure planning.

2.1.5. Information Technology (IT) System Registration. Congressional mandates and DoD acquisition directives require user to register mission critical and mission essential IT systems (IT system as defined in the *Clinger-Cohen Act* [CCA]). Base level OPRs for IT systems that are neither Air Force nor MAJCOM-wide but are mission critical or mission essential need to ensure they are registered in the appropriate IT systems registration database.

2.2. User Contacts and Systems Review. The base-level Communications and Information Systems Planner:

2.2.1. Meets with base customers on a continual basis to learn about their organizational structures, unit missions, and taskings, as defined in war, contingency, and operational plans. This helps them gain a better understanding of customer needs, and provides them the opportunity to educate customers about communications and information systems and processes of procurement.

2.2.2. Reviews the user's current systems for adequacy and currency, using the Communications and Information Systems Blueprint and Communications and Information Systems Installation Records (CSIR).

2.2.3. Promptly identifies what kind of communications and information systems the users need based on current base infrastructure capability and what mission conflicts might exist.

2.2.4. Keeps planning documentation current, such as the Communications and Information Systems Blueprint, CSIRs, and communications and information strategic plans.

2.2.5. Participates in planning forums, briefings, conferences, and meetings (e.g., wing/installation communications and information systems planning forum, construction design reviews, facility utilization boards, space utilization boards, financial working groups, and site activation task forces) to keep informed on what is happening at the base. Provides timely information on communications and information systems planning, development, implementation and proposed base-level communications and information systems policy.

2.2.6. Evaluates the existing communications and information infrastructure for supportability of current and projected mission tasking.

2.2.7. Identifies existing or future communications and information systems shortfalls.

2.3. Communications and Information System Infrastructure. The user identifies communications and information systems requirements using the established base-level requirements process (See AFI 33-103, Requirements Development and Processing) or other planning documentation. The CSO, communications and information systems planners, and STEM-B provide technical solutions for the requirements and verify that the systems will work in the base infrastructure. They study the current communications and information systems infrastructure to decide if it can support current and projected mission taskings. The base-level planner and the STEM-B must continually review systems infrastructure capacities and configurations.

2.4. Communications and Information Systems Shortfalls. The user must identify existing or future shortfalls according to AFI 33-103 or AFI 10-601. Use an AF Form 3215, **C4 Systems Requirements Document** or a locally generated format, to submit requirements that fall within the purview of AFI 33-103. The base-level systems planner and STEM-B accurately document the requirements in the communications and information systems blueprint, requirements documents, or Mission Need Statements (MNS), as applicable.

2.5. Communications and Information Systems Excesses. To verify the use and need of communications and information systems, the CSO must use up-to-date inventories and system configurations. The user must identify excess systems, equipment, software, and services according to AFI 33-111, *Telephone Systems Management*, AFI 33-112, *Computer Systems Management*, AFI 33-114, *Software Management*, and AFI 33-116, *Long Haul Telecommunications Management*.

2.6. Plans. Plans support many purposes. They are developed at many levels, and thus each influence and impact a base differently. The communications and information systems planner comes in contact with a variety of types of documents related to planning. These documents include operations plans, operations orders, program action directives (PAD), programming plans (PPLAN), the C4ISP, mobility plans, and concept plans. These are developed to satisfy peacetime, contingency or wartime operations, or to develop unit objectives. The planner provides inputs to basic plans, develops annexes to basic plans, or develops support plans. The communications and information systems planner is the wing communications and information focal point for all these plans and normally works at the direction of the wing plans office. The communications and information systems planner makes sure of the proper level of staffing of the planning documents.

2.6.1. Communications and Information Systems Mobility and Deployment Management and Plans Evaluation. When Air Force missions (Air Expeditionary Forces) require mobile capabilities, such as a deployable communications and information system, or tactical communications, the communications and information systems planner provides that planning capability. The planner also manages the provision of communications and information systems personnel to support communications and information systems worldwide. Plans, including those from the MAJCOM, numbered Air Force, and the wing, identify operational support and contingency planning requirements. Use AFMAN 10-401V1, *Operation Plan and Concept Plan Development and Implementation*; AFI 10-403, *Deployment Planning*; AFI 10-201, *Status of Resources and Training System*; AFI 10-215, *Personnel Support for Contingency Operations (PERSCO)*; and the USAF War and Mobilization Plan for guidance on mobility planning for contingency operations at all levels of command. **Attachment 9** is Base Level Mobility/Deployment Planning, which provides items for you to consider and tailor to local conditions.

2.6.1.1. The communications and information systems planner must make sure initial and sustained capabilities are available where and when needed. The planner must work with all users to determine what capabilities they need to support the applicable plans; consider equipment, personnel, and communications connectivity required for both sustainment and in-theater requirements.

2.6.1.2. The communications and information systems planner must manage the provision of communications and information personnel to support systems worldwide, whether in direct support of the wing to which assigned, or in support of other component or combatant commands. The communications and information systems planner gets guidance and training from the wing

mobility activity. They make sure the tasked portion of the communications activity reviews all plans and identifies problems associated with support.

2.6.1.3. The Deployability STEMs (STEM-D) are available to assist the communications and information systems planner and serve as technical advisor for MAJCOMs, bases, STEM-Cs, and STEM-Bs on deployment issues relating to communications and information systems.

2.6.2. Base Support Planning. Operations plans may direct additional activities to your location, in which case a base support plan (BSP) is developed according to AFI 10-404, *Base Support Planning*. The communications and information systems planner supports the BSP office of primary responsibility (OPR) and BSP committee to identify, evaluate, and include communications and information systems requirements in the plan.

2.6.3. PADs and PPLANs. PADs are formal planning documents, prepared at HQ USAF level, that accomplish major actions such as the reorganization or formation of a MAJCOM, organization, unit, or function. The Air Force also uses PADs to direct new acquisition programs or modifications to existing programs. They state the objective of the program, assign the OPRs and offices of collateral responsibility (OCR), and establish milestones. The PPLAN, written below HQ USAF level, describes major actions in greater detail, is usually more specific, and focuses more on tasks or milestones. The communications and information systems planner normally provides input to higher level PPLAN annexes and manages and reports the completion of PPLAN tasks as related to communications and information tasks or actions. See AFI 10-501, *Program Action Directives (PAD) and Programming Plans (PPLAN)*, for more information.

2.7. Defining the Requirement. In order to effectively plan, develop, and implement fast, flexible, and efficient communications and information systems to support operational missions, users must clearly articulate communications and information system requirements that can only be met with a material solution. See AFI 33-103 and AFI 10-601 for more information.

2.7.1. Communications and Information Systems Architectures, Roadmaps, and Blueprints. The base-level communications and information systems planner must help the user define requirements and find technical solutions that are consistent with architectural guidelines and policies. Roadmaps and the Communications and Information Systems Blueprints help carry out the planning process, adhere to architectures, and integrate policy ([Attachment 2](#)). Refer to AFI 33-133, *Joint Technical Architecture-Air Force (JTA-AF)* when developing technical solutions. The JTA-AF is the IT technical architecture for the Air Force. It assists the Air Force in meeting the requirements to achieve an interoperable IT infrastructure and reduces costs of ownership. While the *Department of Defense Joint Technical Architecture (DoD JTA)* mandates a core set of standards, the JTA-AF tailors and refines them for Air Force use. The JTA-AF also provides additional standards, recommended products, contractual guidance, IT infrastructure architectures, and guidance not included in the DoD JTA. The JTA-AF encompasses the DoD JTA and, as such, is the single Air Force source for IT standards and products guidance. The JTA-AF and associated implementation plan, compliance procedures, configuration control processes, compliance database, and tools are available on the JTA-AF web page at <http://www.afca.scott.af.mil/jta-af>. The JTA-AF supports all communications and information systems planning processes. (Also see AFI 10-1401 (converting to AFI 90-1101); AFI 33-124, *Enterprise Information Technology Architectures*; and paragraph [A2.1](#).)

2.7.2. Technical Solution. The CSO and communications and information systems planner develop or obtain technical solutions according to AFI 33-103, after the user has identified their requirement.

When needed, the appropriate level STEM reviews needs and helps develop technical solutions and cost estimates. The STEM makes sure technical solutions are consistent with JTA-AF. The CSO makes sure technical solutions are consistent with MAJCOM architecture and approved when required. The requester approves the technical solution, commits to the allocation of resources, and, through the supporting CSO, requests implementation. This usually results in site surveys and project support agreements for EI implementation and statement of work (SOW) for contractual implementation. The communications and information systems planner makes sure the STEM-B includes the requirement and corresponding technical solution in the Communications and Information Systems Blueprint.

2.7.3. Requirements Documents. The base CSO develops local procedures explaining how to prepare and process communications and information systems requirements. This ensures proper documentation of necessary information needed to process base-level approved acquisition requests and those requiring a MNS. To effectively manage communications and information systems requirements, the base-level communications and information systems planner:

2.7.3.1. Checks the base Communications and Information Systems Blueprint for like requirements and compliant technical solutions.

2.7.3.2. Provides information needed to complete the requirements processing.

2.7.3.3. Provides a system for managing communications and information systems requirements.

2.7.3.4. Monitors the requirement and informs the requesting organization of its status.

2.7.3.5. Knows the status of resources needed for all communications and information systems requirements. The requesting activity follows established local, MAJCOM, and Air Force procedures to obtain resources to implement and sustain the technical solution. See AFI 65-601V1, *Budget Guidance and Procedures*; AFI 38-201, *Determining Manpower Requirements*; and AFI 38-204, *Programming USAF Manpower*, for budget and manpower information.

2.7.3.6. Knows the assigned priority for each requirement in the MAJCOM and EI Total Force Group (TFG) work plan. The base communications and information systems planner must inform their MAJCOM representative of any mission changes that may impact the priority of their requirements.

Chapter 3

COMMUNICATIONS AND INFORMATION SYSTEMS BASE-LEVEL INTEGRATION

3.1. Systems Review. Base communications and information personnel, users, and the STEM-B review existing and planned systems capabilities in the base Communications and Information Systems Blueprint, C4ISPs, and other planning documents to maintain a current infrastructure model.

3.1.1. Formal Planning Forum. By direction of the wing/installation commander, the CSO establishes a periodic wing-level planning forum to discuss current and future issues affecting the wing's communications and information infrastructure and various systems it supports. Tailor the forum to meet the wing's needs. The forum's purpose is to make sure a proactive, centralized, wing-wide focus is available to coordinate planning of the communications and information infrastructure. Discussion items may include, but are not limited to: the Communications and Information Systems Blueprint; project implementation status; downward directed communications and information systems and programs; funding issues; civil engineer projects (those in support of communications projects and those that require communications); mission changes and taskings; mobility and deployment of communications and information systems and personnel; long-range infrastructure planning and prioritization; interoperability issues; the STEM; contracts and agreements affecting communications and information systems; base-level communications and information systems policy; manpower, personnel and training associated with communications and information systems, and base customer interests. This is a planning forum. It is not a requirements board, whose sole purpose is the validation and prioritization of user requirements. Requirements result from planning.

3.2. Role of the STEM-B. The STEM-B is a key individual in the base communications and information systems review. The STEM-B:

3.2.1. Serves the wing commander and CSO as a communications and information systems technical advisor and assists the CSO in communications and information system configuration control.

3.2.2. Develops, updates, and maintains the base Communications and Information Systems Blueprint, which includes the communications and information system baseline infrastructure. Advocates for base Communications and Information Systems Blueprint requirements at the base, MAJCOM, and USAF levels.

3.2.3. Serves the user, communications and information planner, and CSO by helping define user mission needs (when required) and, when those needs dictate a materiel solution, defines and clarifies user requirements.

3.2.4. Plans, designs, costs, and reviews technical solutions to user requirements when the CSO requests assistance. Provides technical solutions and cost estimates when the requirement is not in the communications and information systems blueprint.

3.2.5. Plans and integrates base communications and information requirements and works to limit or eliminate duplication.

3.2.6. Reviews communications and information systems for architectural compliance.

3.2.7. Integrates communications and information systems and proposes implementation schedules and is responsible for ensuring implementation is undertaken.

3.2.8. Reviews Military Construction Program (MCP) plans, the base comprehensive plan, and communications and information systems specifications for systems impact.

3.2.9. Reviews C4ISPs and provides infrastructure assessment.

3.3. Reviewing Communications and Information Systems. The communications and information systems planner and STEM-B must participate in all reviews of installed assets, approved programs, and planned requirements. Accomplish these actions during a base communications and information systems review to conserve resources.

3.3.1. Make sure proposed technical solutions are consistent with JTA-AF and the Communications and Information Systems Blueprint.

3.3.2. When checking integration efforts, personnel should take full account of their impact on the infrastructure and detail the methods and means of implementation. Include system description, points of contact, actual or forecasted implementation dates, hardware and software requirements, funding, and classification of information processed in this review.

3.3.3. Seek help from the STEM-C and the Joint STEM (STEM-J) to resolve communications and information systems integration problems.

3.3.4. Use the base Communications and Information Systems Blueprint to provide broad system configuration and design that is consistent with unique characteristics of the base and the operational environment.

3.4. Reviewing Information Assurance (IA). The communications and information systems planner and the STEM-B address systems information assurance (security) issues at all stages of communications and information system development. These issues include operations security (OPSEC), communications security (COMSEC), computer security (COMPUSEC), physical security, emission security (EMSEC), and so forth. See DoD 5000.2-R (Interim); AFPD 33-2, *Information Protection*, (will change to Information Assurance) and its associated instructions; and Air Force Doctrine Document (AFDD) 2-5, *Information Operations*. Review this regulatory guidance early in the project to avoid excess costs and delays.

3.5. Procedures for Successful Systems Integration. Many factors ensure the successful integration of a communications and information system into the base infrastructure during the project planning process. See [Attachment 5](#) for a list of some of these factors. While not all these factors apply to every communications and information system, the base communications and information systems planner as well as project engineers and program/project managers must review them for applicability. Also see [Attachment 8](#) for project management fundamentals.

3.5.1. To support the users, the Communications and Information Systems Planner:

3.5.1.1. Establishes continuity procedures for communications and information systems planning, integrating, and developing requirements.

3.5.1.2. Establishes a reference library of, or has immediate access to, pertinent DoD, USAF, MAJCOM, and other agency communications and information policy and procedures documents, architectures, applicable Mission Area Plans (MAP), Functional Area Plans (FAP), Mission Support Plans (MSP), Information Resource Management (IRM), MAJCOM work plans, base Communications and Information Systems Blueprints, base comprehensive plans, and base operational

plans to properly plan future communications and information systems. In addition, has access to industry standards and project management information.

3.5.1.3. Makes sure communications and information system users are aware of systems on which they are dependent.

3.5.2. To keep planning documents up to date, the communications and information systems planner:

3.5.2.1. Makes sure that proposed technical solutions integrate with JTA-AF and the base Communications and Information Systems Blueprint.

3.5.2.2. Establishes and maintains CSIR files containing historical documents according to AFI 21-404, *Developing and Maintaining Communications and Information Systems Installation Records*.

3.6. Integrating Electronic Records Systems. Use AFPD 37-1, *Air Force Information Management*, (will convert to AFPD 33-3) and associated series documents to approve and maintain an electronic records capability. Additional guidance can be found in DoD Directive (DoDD) 5015.2, *DoD Records Management Program*. Maintain minimum requirements for security and record identification. Organizations notify the appropriate records management activity if they plan to develop, test, or operate electronic records systems. Send a copy of the requirement document or MNS through the MAJCOM records manager (normally in the Records Management office) to HQ USAF/SCTIR, 1250 Air Force Pentagon, Washington DC 20330-1250.

3.7. Technical Solutions and Cost Estimates. Develop technical solutions according to AFI 33-103. When solutions cannot be developed locally, ask the STEM-B for assistance. The STEM-B helps develop a broad-gauge technical solution and cost estimate if the requirement is not currently in the base Communications and Information Systems Blueprint. The STEM-B considers information assurance, architecture, integration, interoperability, mission capability, radio frequency (RF) spectrum capability, life cycle costs, and safety, as well as the items in paragraph 3.7.1. through 3.7.4. The STEM-B provides the supporting CSO the broad-gauge technical solution and cost estimate within 30 days of receipt according to AFMAN 33-105. Before the CSO gives the requester the technical solution, the communications and information systems planner must ensure it meets the user's stated need, the costs associated with the solution are comprehensive and accurate, and the impact of the solution on the current and future architecture is known. The requester must approve or disapprove the technical solution and notify the CSO. The requester also advises the CSO of funds availability, as well as decisions to delay or cancel implementation. The CSO keeps the STEM-B apprised.

3.7.1. COMSEC. The Cryptologic Systems Group Logistics Directorate (CPSG/LG), San Antonio, Texas, helps determine security requirements or COMSEC equipment capabilities when they assist with the technical solution. The CSO or servicing STEM sends the proposed technical solution to the Logistics Management and Systems Division (CPSG/LGLP), 230 Hall Blvd, Suite 120, San Antonio, Texas 78243 for evaluation if it has a COMSEC impact. If they recommend COMSEC equipment, the user must update Allowance Standard (AS) 658, which authorizes COMSEC equipment. This occurs after requirement approval and may occur before funding. Once the allowance is changed, the user submits an AF Form 601, **Equipment Action Request**, according to AFMAN 23-110V2, *USAF Supply Manual*, Part 13, Chapter 8, *Equipment Management*, to order the equipment. The user must contact the base COMSEC accountant to set up a requirement for any keying material for the equipment.

3.7.2. Video Teleconference (VTC) and Video Teletraining (VTT) Equipment. See AFI 33-117, *Visual Information (VI) Management*, when processing requirements, developing technical solutions and implementing VTC and VTT requirements.

3.7.3. Using Excess Automatic Data Processing Equipment. The communications and information systems planner follows guidance of local, MAJCOM, USAF, and DoD redistribution programs to determine whether a requester can use available excess hardware and software in support of a technical solution. Consider alternatives such as computer time-sharing services (either commercial or within the Government) to lower life cycle costs rather than acquiring and operating an in-house data processing system. See AFI 33-112 and AFI 33-114 for more information.

3.7.4. Installation and Maintenance of Equipment. Communications and information systems or equipment installations or modifications must comply with established architectures. (See [Attachment 2](#); AFI 33-124, and AFI 33-133.) Determine what resources are available for installation and maintenance of equipment. Include unit, EI personnel, or contract installation, and determine the most cost-effective organic or contract maintenance method. Include this requirement in the base-level work plan. When local capabilities are insufficient, contact the respective STEM-B for a broad-gauge technical solution and cost estimate.

3.7.5. Logistics Support. Consider what logistics support the system needs and coordinate with appropriate agencies for: maintenance planning; supply support; technical data; manpower; facilities; packaging, handling, storage and transportation; computer resource support; and design interface and compatibility, according to AFI 21-116, *Maintenance Management of Communications-Electronics*.

3.8. Base Civil Engineer (BCE) Support and Coordination. Base communications and information planners work closely with the base civil engineer to obtain BCE support needed to install and sustain communications and information systems ensuring that the facilities have the required communications and information capabilities. See the Air Force 32-series publications, as listed in [Attachment 1](#), for additional guidance concerning BCE procedures. Communications and information systems planning with BCE includes the following:

3.8.1. Environmental Impacts. Identify real or suspected environmental impacts such as asbestos, hazardous waste sites, lead paint, protected wetlands, historic buildings or sites and endangered species habitats, early in the technical solution development process. Environmental concerns may cause extensive project implementation delays.

3.8.2. MCP and Minor Construction Requirements. Design and construct new buildings and major renovations to include wiring, cable support, heating, air conditioning, and electrical power needed for communications and information systems. Make sure BCE reviews HQ USAF/LEE Engineering Technical Letter 87-9, regarding prewiring of military construction projects. Include additional requirements in a project support agreement (PSA) or similar support document. **NOTE:** A single MCP project may include more than one PSA requirement.

3.8.2.1. The communications and information planner makes sure the appropriate communications activities attend project planning conferences, project reviews, provide design comments, and participate in military construction (MILCON) acceptance inspections. (See AFI 32-1021, *Planning and Programming of Facility Construction Projects*.)

3.8.2.2. The communications and information planner analyzes MCP and minor construction projects for their impact on the base communications and information infrastructure and its ability

to support the construction project. Make sure communications requirements are submitted and included in the project at the earliest stages of planning and track those requirements throughout the design and implementation processes of the project. Communications and information systems costs not funded by MILCON projects are submitted with the MILCON project on the DD Form 1391, **Military Construction Project Data**. A communications-computer systems requirements document (CSRD) will also be submitted with the DD Form 1391.

3.8.2.3. Contact the STEM-B to meet technical parameters for MCP projects. The STEM-B helps define requirements and provides additional technical data to give the user a usable facility.

3.8.3. BCE Work Orders. Communications and information project managers help users to develop and process work orders for an approved and funded project. Coordinate work orders with the facility manager and with the assigned work center project coordinator. Most work orders require coordination with the base environmental office and the fire department.

3.8.4. BCE Work Clearance. The communications and information systems planner processes an AF Form 103, **Base Civil Engineering Work Clearance Request**, in order to acquire a digging permit for cable, duct, and associated equipment installation, and assist local unit, EI, or contracted installation personnel with the form preparation and processing. Activities that perform work that may disrupt aircraft or vehicular traffic flow, base utility services (including communications), protection provided by intrusion detection alarm systems, or routine activities of the installation, submit forms according to AFI 32-1001, *Operations Management*. Use CSIRs to certify the location of cables, ducts, equipment, etc., when processing requests and supplement them with the technical expertise of communications and information maintenance/operation systems personnel.

3.8.5. Real Property. The base acquires any real property furnished by the communications and information systems installation activity. Prepare a DD Form 1354, **Transfer and Acceptance of Military Real Property**, according to AFI 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects*, before accepting or certifying an installation (see Air Force Handbook (AFH) 32-9007, *Managing Air Force Real Property*).

3.8.5.1. Examples of communications-electronic (C-E) equipment that is real property:

3.8.5.1.1. Towers, tower guys and poles supporting antenna systems.

3.8.5.1.2. Underground ducts and manholes.

3.8.5.1.3. Concrete footings and hardstands.

3.8.5.1.4. Permanently sited shelters, vans and vehicles with wheels removed.

3.8.5.1.5. Fixed parabolic reflectors in troposphere scatter systems.

3.8.5.1.6. Radar supporting structures.

3.8.5.1.7. Carrier/support cables.

3.8.5.1.8. All other structural elements supporting C-E equipment.

3.8.5.1.9. Energy monitoring control systems (EMCS) equipment (see AFH 32-1084, *Facility Requirements*).

3.8.5.2. Examples of C-E equipment that is not real property:

3.8.5.2.1. Radios/electronic equipment.

3.8.5.2.2. Message and data equipment.

3.8.5.2.3. Rack mounted equipment and associated racks.

3.8.5.2.4. Mobile (not permanently sited) vans, vehicles, and shelters housing C-E equipment.

3.8.5.2.5. Feed-horns, wave-guides and ladder supports, rotatable log periodic (RLP) antennas and other radiating receiving elements of antenna systems.

3.8.6. Drawings. BCE design and construction managers include provisions for the development and delivery of "as-installed" CSIRs in construction and alteration projects according to AFI 21-404. They also use CSIR data provided by the CSIR manager to facilitate comprehensive planning actions and to update comprehensive base or site plans. The communications and information Engineering Data Service Center (EDSC), 38 EIG/TS, Tinker AFB OK, along with the base CSO, share their CSIRs with the base or site civil engineers. Likewise, the engineers share other communications drawings and real property records with the communications and information systems EDSC and base CSO.

3.8.7. Comprehensive Plan. The comprehensive plan, prepared by the base civil engineer, is the result of an analysis of the current, short- and long-range development potential of an installation. See AFI 32-7062, *Air Force Comprehensive Planning*, for a detailed description of the contents of the plan, as well as the comprehensive planning process. The STEM-B and communications and information planner review relevant portions of the comprehensive plan and assist with the comprehensive planning process where required to ensure the appropriate communications and information infrastructure.

3.9. Funding and Work Plans. See [Attachment 4](#) on planning "how, where, and when" to get funds and setting a work plan schedule to implement the requirement.

Chapter 4

COMMUNICATIONS AND INFORMATION SYSTEMS IMPLEMENTATION

4.1. Program Management Concepts. Program management occurs at all levels of command. The objectives of program management are to provide the user with those communications and information systems required to satisfy the documented requirement within cost and schedule timelines. Program management activities include:

- 4.1.1. Estimation--Determine the tasks, resources, budget, and schedule.
- 4.1.2. Risk Analysis--Identify, assess, and prioritize risks.
- 4.1.3. Scheduling--Develop timelines and assign people and resources.
- 4.1.4. Tracking and Control--Monitor the schedule and take corrective action if the program is not on schedule or is over budget.
- 4.1.5. Measurement--Performance indicators.

4.2. Program Management Responsibilities. Base level projects are often the result of program management at many levels of command. **Attachment 7** lists project management tasks. Program management requires interaction among many support activities, to include base level planners, as identified in program management directives (PMD), work plans, the C4ISP Guide, and SOWs. If the new system or program operates across the Air Force network (this includes base level requirements), a C4ISP and Certificate of Networthiness (CoN) must be accomplished. The extent of the C4ISP process is dependent on where the new system is deployed. It begins when an implementing agency receives a PMD, work plan, or an approved and funded communications and information systems requirements document and goes through a C4ISP and CoN process ending with the transfer of equipment and software to the user or operations and maintenance (O&M) activity. For more guidance on C4ISP and CoN processes go to <http://www.afca.scott.af.mil/c4isp> and <http://www.afca.scott.af.mil/con>(also, see **Attachment 6**.)

4.2.1. Implementing Activity:

4.2.1.1. The implementing activity assumes program management responsibility when it receives an approved and funded directive for a program. Their tasks may include:

- 4.2.1.1.1. Appointing a single program manager (PM) for each program, and give the PM the authority to approve programming plans. The PM is also responsible for the development of the C4ISP and submitting it to HQ AFCA/SY.
- 4.2.1.1.2. Engineering, designing, installing, testing, removing, or relocating communications and information systems.
- 4.2.1.1.3. Providing and procuring hardware and software items and any test equipment and tools needed for installation and support that are not available to the O&M activity.
- 4.2.1.1.4. Installing modification kits, if available, at the time of equipment installation.
- 4.2.1.1.5. Managing, controlling, and directing software development.
- 4.2.1.1.6. Reviewing civil engineering design data, including changes, to see how they affect the program and making sure design drawings support the communications and information system project.

4.2.1.1.7. Appointing a test director for systems tests (see paragraph [5.3](#)).

4.2.1.2. Program Manager (PM) Responsibilities. With the aid, advice, and coordination of requiring, participating, and supporting activities, the PM:

4.2.1.2.1. Makes sure the contract administration office uses standard installation contracts and provides instructions for transferring accountability of government-furnished equipment (GFE) and contractor-furnished equipment (CFE) when a contractor installs the system.

4.2.1.2.2. Coordinates continuously with the appropriate STEM-B when the requirement transitions into the implementation phase.

4.2.1.2.3. Determines the sensitivity, criticality, and security classification of the information processed by the communications and information system before developing a programming plan.

4.2.1.2.4. Develops, coordinates, and distributes programming and related support plans.

4.2.1.2.5. Determines and tracks program costs and resolves funding problems.

4.2.1.2.6. Notifies the requiring CSO and user if costs will exceed the original cost estimate by 20 percent or more.

4.2.1.2.7. Ensures preparation of PSAs according to [Attachment 6](#) or similar support documents when the implementing activity is a contractor.

4.2.1.2.8. Examines the feasibility of using organic, contractor, or a combination of both resources, to engineer or install the communications and information system.

4.2.1.2.9. Assigns responsibility to obtain host nation approval, electrical safety certification, and connection approval.

4.2.1.2.10. Coordinates with the acquisition agency to make sure the method of acquiring an item, such as COMSEC equipment, gets the system on-line by the time the user needs it.

4.2.1.2.11. Defines logistics support needs. This includes housing, transportation, and equipment/materiel storage.

4.2.1.2.12. Advises the implementing activity what resources it needs.

4.2.1.2.13. Develops C4ISPs and ensures that they are reviewed and coordinated according to Air Force C4ISP policy and guidance (see paragraph [2.7.1](#)).

4.2.1.2.14. Ensures that C4ISPs are reviewed by appropriate agencies.

4.2.2. Base-Level Project Manager (normally base level communications and information systems planning and implementation personnel):

4.2.2.1. Ensures all affected agencies coordinate on communications and information projects. This includes coordination with base contract and financial management offices.

4.2.2.2. Coordinates with the STEM-B to make sure the requirement solution complies with the current architecture.

4.2.2.3. Notifies 38th Engineering and Installation Group (EIG) of implementation funding, when they are the implementing activity.

- 4.2.2.4. Coordinates the transfer of equipment and software accountability to the using or O&M activity.
- 4.2.2.5. Notifies the BCE of real property structures according to AFI 32-9005, *Real Property Accountability and Reporting*.
- 4.2.2.6. Requests and coordinates radio frequency support according to AFI 33-118, *Radio Frequency Spectrum Management*. When applicable (refer to AFI 33-118), host nation approval must be obtained prior to using any radio frequency emitting equipment.
- 4.2.2.7. Coordinates logistics support needs before the communications and information system installation according to AFI 21-116.
- 4.2.2.8. Ensures, along with communications and information systems technicians and engineers, the support construction is technically adequate and compatible with the project.
- 4.2.2.9. Monitors and coordinates program management tasks assigned to their activity.
- 4.2.2.10. Keeps the PM advised on the status of projects per the implementing directive.
- 4.2.2.11. Reports any changes to the PM that could impact project development or implementation.
- 4.2.2.12. Participates in program management meetings when requested by the PM.
- 4.2.2.13. Develops support plans as required by programming plans and when directed by the PM.
- 4.2.2.14. Coordinates equipment authorizations and ensures they are added to the appropriate AS and equipment management system (see AFMAN 23-110V2 and AFI 33-112).
- 4.2.2.15. Coordinates delivery of project materiel to the base. The project manager coordinates adequate safeguard and storage for all project materiel. When the supply function is providing courtesy storage, provide the chief of supply (COS) with a list of authorized project managers. Notify the COS of pending delivery and removal of project materiel. Maintain a detailed inventory of all project materiel and inspect/inventory annually. Ensure that containers are kept sealed. Also, coordinate the disposition of residue or excess material with the COS, program management offices, or contractors.

4.2.3. Requiring Activity (User):

- 4.2.3.1. Develops and coordinates their communications and information systems requirement or MNS according to AFI 33-103 or AFI 10-601.
- 4.2.3.2. Identifies changes to the original requirement to the CSO, and if those changes result in a cost increase of 20 percent or more, determines if implementation should proceed.
- 4.2.3.3. Arranges for disposal of removed equipment.
- 4.2.3.4. Participates in system testing and certification. Appoints an associate test director for systems tests (see paragraph 5.3.).
- 4.2.3.5. Provides transportation for DoD installation personnel using General Services Administration (GSA) or commercial rental vehicles when host base vehicles are not available.

4.2.3.6. Adds equipment to AS and equipment management systems according to AFMAN 23-110V2.

4.2.3.7. Assures proper funds appropriations are programmed and available to initiate implementation.

4.2.3.8. Ensures the license to operate radio frequency emitting equipment is kept current and accurate according to AFI 33-118.

4.2.4. Program Action Officer (PAO):

4.2.4.1. Monitors and coordinates program management tasks assigned to their activity.

4.2.4.2. Keeps the PM advised on the status of projects per the implementing directive.

4.2.4.3. Reports any changes to the PM that could impact project development or implementation.

4.2.4.4. Participates in program management meetings when requested by the PM.

4.2.4.5. Develops support plans as required by programming plans and when directed by the PM.

4.2.5. Headquarters Air Force Materiel Command (HQ AFMC) Logistics Centers, Electronic Systems Center (ESC), 38th EIG, and Standard Systems Group (SSG) are responsible for the following:

4.2.5.1. Coordinating the Installation. In coordination with the implementing command or activity, 38 EIG plans what EI resources the installation requires based on specific program tasks assigned to AFMC. The 38 EIG draws up a formal memorandum between the PM and the appropriate AFMC activity agreeing to the tasks, such as preliminary communications and information systems engineering help, installation engineering, and on-site installation. SSG plans similarly for projects they implement. In the memorandum, outline AFMC tasks by system or equipment, system location, and installation schedule. Review the memorandum annually and amend it at any time mutually acceptable by affected parties.

4.2.5.2. AFMC/ESC (38 EIG and SSG):

4.2.5.2.1. Helps the implementing command or activity to identify what communications and information support it needs.

4.2.5.2.2. Provides on-site support to the implementing command or activity when a site activation or alteration task force (SATAF) helps to bed down a weapons system.

4.2.5.2.3. Helps with the developmental testing and evaluation (DT&E) and operational test and evaluation (OT&E) of the communications and information system in a realistic environment according to AFI 99-101, *Developmental Test and Evaluation*, and AFI 99-102, *Operational Test and Evaluation*.

4.2.5.2.4. Carries out the responsibilities assigned to it in the PMD, work plans, programming plans, and other documents.

4.2.5.2.5. Acquires and provides equipment items for downward directed and funded programs.

4.2.5.2.6. Ships equipment in complete condition per the time compliance technical order (TCTO).

4.2.5.2.7. Makes sure initial and life cycle logistics support is available to the using and O&M activities.

4.2.5.2.8. Advises the PM and supporting command concerning equipment delivery.

4.2.6. AFMC/ESC, Cryptologic Systems Group Logistics Directorate, Logistics Management and Systems Division, San Antonio, Texas (CPSG/LGLP):

4.2.6.1. Programs for and provides COMSEC equipment and materiel as requested by the using Command Equipment Management Office (CEMO).

4.2.6.2. Carries out the responsibilities assigned in the PMD, work plans, programming plans, and other documents.

4.2.6.3. Provides the PM with needed information and advice about the requirement.

4.2.6.4. Serves as the executive agent and Inventory Control Point for COMSEC equipment.

4.2.6.5. Reviews COMSEC requirements for technical, architectural, acquisition strategy, logistics support, costing, and doctrinal adequacy, from a COMSEC compatibility viewpoint.

4.2.6.6. Procures, stocks, stores, issues, and performs depot level maintenance for COMSEC equipment.

4.2.7. Host Base:

4.2.7.1. Before Installations:

4.2.7.1.1. Provides support as defined in the PMD, work plans, programming plans, PSA, and other support documents. This may include documents prepared by other than Air Force activities, which serve the same purpose.

4.2.7.1.2. Provides the PM with needed information, definition, and advice about the requirement.

4.2.7.1.3. Coordinates and prepares responses for all documents that assign base-level functions.

4.2.7.1.4. Confirms support actions.

4.2.7.1.5. Holds project review meetings with the requiring activity, communications and information systems planner, the functional area project monitor, the O&M activities, civil engineer, project engineer, and the STEM-B.

4.2.7.1.6. Discusses base projects with individual communications and information users and the O&M systems technicians.

4.2.7.1.7. Involves the communications and information user, the O&M activity, and civil engineer in site surveys.

4.2.7.1.8. Submits requests for engineering changes on an AF Form 1146, **Engineering Change Request/Authorization**, to the servicing EI unit when they are the implementing activity.

4.2.7.1.9. Provides the implementing activity with preliminary and final civil engineering design data and reproducible copies of as-built drawings of the construction.

4.2.7.1.10. Provides secure dry storage for project materiel either on base or contracted off base (see AFMAN 23-110V2).

4.2.7.1.11. Provides utilities, serviceable cable ducts, vaults, and manholes as needed.

4.2.7.1.12. Manages initial spare support list assets and documentation per AFMAN 23-110V2.

4.2.7.1.13. Constructs, maintains, and repairs facilities and equipment as stated in the programming plans, support plans, contracted support documents, and the PSA.

4.2.7.1.14. Visits the materiel storage location and verifies receipt of materiel.

4.2.7.1.15. Establishes a tracking system for PSA/support document tasking and verifies task completion before notifying the PM.

4.2.7.1.16. Monitors the status of outstanding BCE work orders.

4.2.7.1.17. Maintains current continuity procedures.

4.2.7.2. During Installations.

4.2.7.2.1. Assists installation personnel with the preparation and processing of the BCE Work Clearance Requests.

4.2.7.2.2. Helps the installation team to obtain local purchase and contract funding from the implementing command.

4.2.7.2.3. Supports project acceptance inspections.

4.2.7.2.4. Provides secure storage, corrosion control, and a vehicle parking area to safeguard installation tools and equipment.

4.2.7.2.5. Gives installation personnel a supply account number for ordering replacement items and building up stock levels of operating supplies.

4.2.7.2.6. Supplies vehicles and petroleum, oil, and lubricants (POL) as required by installation personnel. If host base resources are not available, the user provides GSA or commercial rental vehicles. Costs are borne by the host installation, unless otherwise stated. Review contracts to determine the extent of support to contractor personnel.

4.2.7.2.7. Provides housing and messing facilities.

4.2.7.2.8. Provides base administrative, engineering, maintenance, and visual information assistance as required in support of the project.

4.2.7.2.9. Packs, crates, transports, and ships project materiel.

4.2.7.3. After Installations.

4.2.7.3.1. Disposes of excess project materiel.

4.2.7.3.2. Completes and distributes all DD Form 250, **Material Inspection and Receiving Report**, and AF Form 1261.

4.2.7.3.3. Make sure "as-installed" CSIRs are sent to the communications and information EDSC, according to AFI 21-404.

4.3. Securing an Incomplete Installation. If an installation team has to leave before the installation is complete, the installing activity and the host base prepare a letter of custodial agreement. In this letter the host base agrees to secure the communications and information systems equipment and installation team tools and equipment left on-site. The letter also states why the team is leaving and gives an estimated date when work will resume.

4.4. Control of the Installation Team. The PM controls the schedule of the installation team. Normally the team leaves after system acceptance, but only the PM may direct the team to leave before the installation is complete.

Chapter 5

INSPECTING, ACCEPTING, AND REMOVING COMMUNICATIONS AND INFORMATION SYSTEMS

5.1. Acceptance Inspection. This inspection determines if equipment and software meet the technical and performance standards identified in the project instructions or contractual documents. **NOTE:** It is important that frequency authorizations are obtained prior to testing or RF systems/devices.

5.1.1. The inspection consists of a review of equipment and software test results, a physical review of the installation and a check and verification of associated documents.

5.1.2. Conduct the acceptance inspection immediately after the final equipment and software tests. Representatives of the user, O&M, and EI organic/contracted activities, as appropriate, perform the inspection. Other personnel may represent the implementing command, the requiring command, the communications and information systems O&M activity, BCE, and the contractor. The system's O&M activity leads the inspection team. The PM tailors the inspection to the particular system tested. The inspection team decides what to review, in what order, and how thorough to make each part of the inspection if not already identified in the project scope.

5.2. Inspection Documents. The implementing activity provides appropriate documents such as the as-installed drawings, DD Form 250, equipment accountability documents, cable distribution sheets, system test logs, installation instructions and design standards, equipment performance records, test data sheets, equipment and software test records, X-radiation certificates, C4ISPs, CoNs, Certificates to Operate (CTO), certification and accreditation letters, and radio frequency radiation profiles when needed. The base-level communications and information systems planner provides the AF Form 1261, contractual documents, and host nation and connection approval documents, if necessary.

5.3. System Tests. The implementing command or activity appoints a test director. The O&M activity appoints an associate test director. Representatives of the installing and O&M activities, the requiring command, and the acquisition command (when appropriate) conduct the tests. If a contractor installs the system, contractor representatives and a base procurement office representative take part in the tests according to contract terms.

5.4. Installation Exceptions. Installation exceptions are deficiencies that prevent the system from meeting the inspection criteria. They include faulty installation, software errors, equipment failures, unsuccessful tests, and other faults as determined by the inspection team.

5.4.1. Major Exceptions. Some exceptions keep the system from meeting the specified operational requirements. These are termed major exceptions. After finding such a deficiency, the inspection team continues the inspection as far as possible, suspends the inspection, documents the exceptions, and does not accept the system for use.

5.4.1.1. The inspection team formally notifies the responsible activity that it must correct the problems. The activity must correct these problems for the process to continue.

5.4.1.2. The inspection team resumes the inspection after correction of all major exceptions.

5.4.2. Minor Exceptions. These exceptions do not keep the system from meeting operational requirements but keep it from meeting all inspection criteria. The user may accept the system if the system test and inspection identify only minor exceptions.

5.4.2.1. The inspection team lists the minor exceptions on AF Form 1261. The inspection team determines the activity responsible for correcting the fault and forecasts the date of correction.

5.4.2.2. After correction of each minor exception, the O&M activity releases the responsible activity and annotates the AF Form 1261 to reflect the date corrected. The base CSO and the communications and information systems user do not certify the system until all minor exceptions are cleared. The communications and information planner monitors the correction of minor exceptions.

5.5. Using Communications and Information Systems Before Acceptance. Sometimes it is necessary to use systems before complete support is available or before responsible activities have cleared minor exceptions. In these cases, the PM, O&M activity, and the user make a risk assessment. Only the user can accept responsibility for using the system before all minor exceptions are cleared.

5.6. Communications and Information Systems Acceptance. The installing activities and the host base communications and information systems planners have joint responsibility for completing the AF Form 1261. **NOTE:** Help screens provide instructions for each block of the AF Form 1261. This information is found at: <http://afpubs.hq.af.mil/forms/formlist.asp?puborg=AF&series=1200-1299>.

5.6.1. Once the base CSO and the user have indicated certification in Block 11 of the AF Form 1261, the communications and information system is operational. Block 10 lists the functions that have accepted the installation.

5.6.2. If the system is contractor-installed, include a copy of DD Form 250 as an attachment to AF Form 1261. If the contractor fails to perform to contract specifications, do not sign DD Form 250 until advised by the base procurement officer (the using activity may be entitled to liquidated damages).

5.6.3. The installation team may leave after completion of Blocks 10A-D of the AF Form 1261 and after transfer of all communications and information systems equipment, software, and real property.

5.6.4. The communications and information systems planner obtains the additional signatures required on the AF Form 1261, sends a copy of the completed form to the PM, and keeps the original document and attachments in the CSIR administrative files for life-cycle documentation. The communications and information systems planner also coordinates project completion with the STEM-B for update in the Communications and Information Systems Blueprint.

5.7. Removing Communications and Information Systems. Certify satisfactory removal of a communications and information system after disposing of the system or equipment and after completing AF Form 1261. Coordinate the removal action with the STEM-B and make sure all planning documents (including the Communications and Information Systems Blueprint), CSIRs, and BCE drawings reflect the removal of the communications and information system. Base-level OPRs need to delete the base-wide system from the appropriate IT systems registration database.

Chapter 6

MANAGING COMMUNICATIONS AND INFORMATION SYSTEMS RESOURCES

6.1. Financial Management. Procedures provided in this section help the communications and information systems resource advisor to understand accounting terminology, budget management, billing procedures, voucher preparation, establishment of obligations for anticipated expenses, and invoice processing.

6.1.1. The Communications and Information Systems Resource Advisor. The resource advisor attends the base financial working group meeting and briefs the group on the status of communications and information funds and expenditures. The advisor also assists the CSO and participates in the base financial management board. See AFPD 65-6, *Budget*, and associated AFIs for more information. See specific responsibilities and tasks detailed below.

6.1.1.1. Budget Development and Formulation. The resource advisor must:

6.1.1.1.1. Request, interpret and consolidate inputs from various activities.

6.1.1.1.2. Receive and evaluate budget calls.

6.1.1.1.3. Brief the cost centers and request their input.

6.1.1.1.4. Prepare a draft budget and coordinate it with the cost centers and unit staff.

6.1.1.1.5. Finalize and send the draft budget according to the servicing budget office's guidance and procedures.

6.1.1.2. Budget Execution. The resource advisor:

6.1.1.2.1. Manages the obligation, expenditure, and reprogramming of current year program.

6.1.1.2.2. Receives, analyzes, and recommends distribution of the annual and quarterly budget authority; distributes and posts the spending targets.

6.1.1.2.3. Requests funds reprogramming.

6.1.1.2.4. Reconciles entries against management reports.

6.1.1.2.5. Manages funds, balances the operating budget ledger, and verifies it to the funding authority. See AFPD 65-6 and associated AFIs for more information.

6.1.1.3. Billing Accounting. The resource advisor manages and prepares miscellaneous commitment, obligation, and expense documents and sends them to the servicing financial activity; requests and sends the estimate for monthly expenditures; and makes sure contract or purchase orders are established and deobligates residual funds.

6.1.1.4. Telephone Bills. The resource advisor:

6.1.1.4.1. Ensures bills and invoices are date stamped upon receipt.

6.1.1.4.2. Separates the toll and other administrative telephone bills.

6.1.1.4.3. Sends bills to the applicable activity for verification according to local verification procedures.

6.1.1.4.4. Evaluates verification of services and charges, prepares the certification document, and sends it to the servicing financial activity. See AFI 33-111 for more information about verification procedures.

6.1.1.5. Preparing Reimbursement Documentation. Resource advisors review support documentation and prepare the service-billing document for services provided to the contractor. The resource advisor then sends the billing information to the servicing financial activity for uncommon customer services and nonbeneficial tenants. See DFAS-DE 7010.1-R, *General Accounting and Finance Systems at Base Level*, for more information.

6.1.1.6. Audit Reports. The base communications and information systems plans and implementation section is the communications and information focal point for auditor visits and audit reports. Use audits to improve programs, make financial reporting more accurate, and promote economy, efficiency, and effectiveness throughout the Air Force. Actions on recommendations help the DoD work better at less cost. Communications and information systems planning personnel make sure Government Accounting Office, DoD Inspector General, Air Force Audit Agency, and other auditors are provided appropriate access to personnel, records, or facilities needed to meet their announced audit objectives. Follow procedures in the 65-series publications listed in [Attachment 1](#) to support auditors, process, and follow up on reports.

6.1.1.7. Financial Management Practices. Financial management practices follow AFPD 65-6 and associated AFIs, MAJCOM publications, and local directives. The following additional practices are also helpful:

6.1.1.7.1. Establish continuity procedures.

6.1.1.7.2. Compare the operating budget ledger to the funding document to make sure the quarterly and annual authorizations are accurate.

6.1.1.7.3. Periodically give the CSO the status of funds and the financial impact of changes in operational or administrative responsibilities.

6.1.1.7.4. Make sure invoices and bills are date stamped on receipt and sent to the focal point for verification.

6.1.1.7.5. Send payments to the servicing financial activity in enough time to meet the due date in the tariff or contract.

6.1.1.7.6. Resolve discrepancies between leased services billing and the pertinent communications and information systems documentation, in a timely fashion.

6.1.1.7.7. Separate the duties of certification, verification, and payment of leased services. Use DD Form 250 to certify services or equipment received by the communications and information user. Complete the form within 3 days of receipt to allow the Government to take advantage of discounts offered for early payment of accounts.

6.2. Agreements Management. The base communications and information systems planner is the communications and information systems installation Functional Area Agreement Coordinator and installation receiver Support Agreements Coordinator (SAC). They develop, review, and process support agreements, according to AFI 25-201, *Support Agreements Procedures*. There are several types of agreements. A DD Form 1144, **Support Agreement**, documents the support services a supplier provides a receiver and the reimbursement the receiver will pay to the supplier for the identified levels of support.

Use a Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) in place of the DD Form 1144, when it is necessary to document financial and support arrangements with US nongovernmental activities, nonmilitary agencies or individuals, or before publishing a BSP. Functional areas also use MOAs or MOUs to document mutually agreed upon statements of fact, intentions, procedures, and policies for future actions.

6.2.1. **Role of Wing Logistics Support.** The primary office at base level that manages agreements is the wing logistics support activity, which functions as the installation supplier support agreement coordinator. The communications and information systems planner works with the SAC to provide communications and information support when activities request it, and when the communications unit requires support. The communications and information planner also processes support requests to make sure that communications and information systems are installed, relocated or removed.

6.2.2. **Communications and Information Systems Planners Responsibilities.** Process requests for support by reviewing existing agreements for applicability, determining responsibility within the unit, coordinating the impact on their operations, and drafting, staffing, and obtaining the approving official's signatures. Make sure all communications and information agreements on file are current and review them for applicability. Draft, finalize, and get signatures for required changes.

6.3. Contract Management. The communications and information systems plans and implementation section is the focal point for all unit communications and information systems contracts. They provide the unit commander with a single point of contact (POC) to manage communications and information systems contracts effectively. Communications and information systems planning personnel maintain a list of all communications and information systems contracts for which the unit has oversight responsibility. They make sure that accurate information is readily available to plan for and react to contracting situations. Overall, the base procurement office performs acquisition and contract management. However, some contracts such as Communications Service Authorization (CSA) and O&M are managed by the 38 EIG/PK.

6.3.1. **Contract Management Guidance.** Use understandable terms when completing the required documents. Only duly appointed procurement officers establish or interpret contracts, change terms, resolve questions, and obligate the Federal Government. The communications and information contract focal point, planning personnel:

6.3.1.1. Assist in managing communications and information contracts.

6.3.1.2. Help prepare quality assurance surveillance plans to evaluate contractor performance as supported by subject matter experts within the communications and information systems unit.

6.3.1.3. Help prepare AF Form 9, **Request for Purchase**.

6.3.1.4. Review contract requirements documentation for completeness before sending them to the base contracting office.

6.3.1.5. Notify the base procurement officer of changes in quality assurance personnel and make sure that new quality assurance evaluators (QAE) receive training from the base procurement officer.

6.3.2. **Contract Management Responsibilities.** Manage communications and information systems contract management efforts using AFI 63-501, *Air Force Acquisition Quality Program*, AFI 63-124, *Performance-Based Service Contracts (PBSC)*, MAJCOM and local directives, and these guidelines:

- 6.3.2.1. Establish continuity procedures on contract management.
- 6.3.2.2. Establish a focal point for communications and information systems contracts.
- 6.3.2.3. Verify that the contract package has all required documents.
- 6.3.2.4. Confirm that sufficiently detailed written procedures cover all but unusual circumstances.
- 6.3.2.5. Document required QAE training.
- 6.3.2.6. Document contractor-performed QAE.
- 6.3.2.7. Develop a QAE file for each contract.

6.3.3. QAE Responsibilities. Ensure a qualified QAE is assigned to make sure the contractor performs as required by contract terms and the Government pays only for those services the contractor actually performed.

- 6.3.3.1. The unit may appoint more than one QAE for a specific contract with one individual as the lead QAE. Place the lead QAE in the area that oversees daily operations of the contracted services.
- 6.3.3.2. Functional supervisors must make sure the assigned QAE performs their duties. AFI 63-124 governs the responsibilities and duties of the QAE, the performance work statement, and the quality assurance surveillance plan.
- 6.3.3.3. The QAE objectively evaluates and documents contractor performance by performing inspections for assigned service contracts according to the quality assurance surveillance plans. The QAE notifies the administrative contracting officer and the functional area chief if a contractor's performance is unacceptable and prepares proper documentation for the QAE file.

6.4. Information Collections, Records, and Forms.

- 6.4.1. Information Collections. No information collections are created by this publication.
- 6.4.2. Records. Project files contain prescribed forms and other pertinent project records according to AFMAN 37-139 (will convert to AFMAN 33-322V4), Table 33-4, Rule 10.
- 6.4.3. Forms (Adopted and Prescribed).
 - 6.4.3.1. Adopted Forms. DD Form 2, **Armed Forces of the United States--Geneva Conventions Identification Card**; DD Form 250, **Material Inspection and Receiving Report**; DD Form 1144, **Support Agreement**; DD Form 1354, **Transfer and Acceptance of Military Real Property**; DD Form 1391, **Military Construction Project Data**; AF Form 9, **Request for Purchase**; AF Form 103, **Base Civil Engineering Work Clearance Request**; AF Form 522, **USAF Ground Weapons Training Data**; AF Form 601, **Equipment Action Request**; AF Form Form 847, **Recommendation for Change of Publication**; AF Form 1098, **Special Task Certification and Recurring Training**; AF Form 1141, **Current Leave and Earnings Statement**; AF Form 1199A-D, **USAF Restricted Area Badge**; AF Form 3215, **C4 Systems Requirements Document**.

6.4.3.2. Prescribed Forms. AF Form 1261, **Communications and Information Systems Acceptance Certificate**, and AF Form 1146, **Engineering Change Request/Authorization**.

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DCS/Communications and Information

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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DISAC 310-130-1, *Submission of Telecommunications Service Requests*

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AFDD 1-2, *Air Force Glossary*

AFDD 2-5, *Information Operations*

AFPD 10-6, *Mission Needs and Operational Requirements*

AFPD 21-4, *Engineering Data*

AFPD 33-1, *Command, Control, Communications, and Computer (C4) Systems* (will become Communications and Information Systems)

AFPD 33-2, *Information Protection* (will become Information Assurance)

AFPD 37-1, *Air Force Information Management* (will convert to AFPD 33-3)

AFPD 65-6, *Budget*

AFPD 90-9, *Operational Risk Management*

AFI 10-201, *Status of Resources and Training System*

AFI 10-215, *Personnel Support for Contingency Operations (PERSCO)*

AFI 10-403, *Deployment Planning*

AFI 10-404, *Base Support Planning*

AFI 10-501, *Program Action Directives (PAD) and Programming Plans (PPLAN)*

AFI 10-601, *Mission Needs and Operational Requirements Guidance and Procedures*

AFI 10-1401, *Modernization Planning Documentation* (converting to AFI 90-1101, *Modernization Planning*)

AFI 16-301, *US Air Force Priority System for Resources Management*

AFI 21-116, *Maintenance Management of Communications-Electronics*

AFI 21-401, *Engineering Data Storage, Distribution, and Control*

AFI 21-404, *Developing and Maintaining Communications and Information Systems Installation Records*

AFI 25-201, *Support Agreements Procedures*

AFI 32-1001, *Operations Management*

AFI 32-1021, *Planning and Programming of Facility Construction Projects*

AFI 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects*

AFI 32-1032, *Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects*

AFI 32-1052, *Facility Asbestos Management*

AFI 32-7062, *Air Force Comprehensive Planning*

AFI 32-9005, *Real Property Accountability and Reporting*

AFI 33-103, *Requirements Development and Processing*

AFI 33-111, *Telephone Systems Management*

AFI 33-112, *Computer Systems Management*

AFI 33-114, *Software Management*

AFI 33-116, *Long-Haul Telecommunications Management*

AFI 33-117, *Visual Information (VI) Management*

AFI 33-118, *Radio Frequency Spectrum Management*

AFI 33-124, *Enterprise Information Technology Architectures*

AFI 33-133, *Joint Technical Architecture-Air Force*

AFI 33-203, *Emission Security*

AFI 33-360V2, *Forms Management Program*

AFI 37-138, *Records Disposition-Procedures and Responsibilities* (will convert to AFMAN 33-322V3)

AFI 38-201, *Determining Manpower Requirements*

AFI 38-204, *Programming USAF Manpower*

AFI 63-124, *Performance-Based Service Contracts (PBSC)*

AFI 63-501, *Air Force Acquisition Quality Program*

AFI 65-601V1, *Budget Guidance and Procedures*

AFI 90-901, *Operational Risk Management*

AFI 99-101, *Developmental Test and Evaluation*

AFI 99-102, *Operational Test and Evaluation*

AFMAN 10-401V1, *Operation Plan and Concept Plan Development and Implementation*

AFMAN 23-110V2, *USAF Supply Manual*

AFMAN 33-105, *Engineering and Installation Services*

AFMAN 37-139, *Records Disposition Schedule* (will convert to AFMAN 33-322V4)

AFH 32-1084, *Facility Requirements*

AFH 32-9007, *Managing Air Force Real Property*

AFJMAN 23-209, *Storage and Handling of Hazardous Materials*

AFPAM 91-215, *Operational Risk Management (ORM) Guidelines and Tools*

AFPAM 32-7043, *Hazardous Waste Management Guide*

OSHA Regulation (Standard - 29 CFR), Part 1910, *Occupational Safety and Health Standards*

OSHA Regulation (Standard - 29 CFR), Part 1926, *Safety and Health Regulation for Construction*

HQ USAF/LEE Engineering Technical Letter 87-9

Abbreviations and Acronyms

ACAT—Acquisition Category

ACO—Administrative Contracting Officer

ADP—Automated Data Processing

ADPE—Automated Data Processing Equipment

AEF—Air Expeditionary Force

AF-CIO—Air Force Chief Information Officer

AFCERT—Air Force Computer Emergency Response Team

AFCSA—Air Force C4 Systems Architecture

AFDD—Air Force Doctrine Document

AFH—Air Force Handbook

AFI—Air Force Instruction

AFIWC—Air Force Information Warfare Center

AFJMAN—Air Force Joint Manual

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AIS—Automated Information System

ANG—Air National Guard

AS—Allowance Standard

ASC—Allied Support Completion

BCE—Base Civil Engineer

BIP—Blueprint Implementation Plan

BPAC—Budget Program Activity Code

BPID—Blueprint Phase Implementation Directive

BSP—Base Support Plan

BSPC—Base Support Plan Committee

C4—Command, Control, Communications and Computers

C4I—Command, Control, Communications, Computers, and Intelligence

C4ISP—Command, Control, Communications, Computers, and Intelligence Support Plan

C4ISR—Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

C&A—Certification & Accreditation

CAMS—Core Automated Maintenance System

CBT—Computer Based Training

CCA—Clinger-Cohen Act

CCB—Configuration Control Board

C-E—Communications-Electronics

CEMO—Command Equipment Management Office

CFE—Contractor-Furnished Equipment

CFR—Code of Federal Regulations

C-Level—Category Level

COMPUSEC—Computer Security

COMSEC—Communications Security

CoN—Certificate of Networthiness

CONUS—Continental United States

COS—Chief of Supply

COTS—Commercial-Off-The-Shelf

CSA—Communications Service Authorization

CSD—C4 Systems Directive

CSIR—Communications and Information Systems Installation Records

CSO—Communications and Information Systems Officer

CSPP—C4 Systems Programming Plan

CSRD—Communications-Computer Systems Requirements

CTO—Certification to Operate

CWD—Chemical Warfare Defense

DISA—Defense Information Systems Agency

DOC—Designed Operational Capability

DoD—Department of Defense

DRU—Direct Reporting Unit

DT&E—Developmental Testing and Evaluation

EDSC—Engineering Data Service Center

EEIC—Element of Expense Identification Code

EI—Engineering and Installation

EIG—Engineering Installation Group

EMCS—Energy Monitoring Control Systems

EMSEC—Emission Security

ESC—Electronic Systems Center

FAP—Functional Area Plans

FOA—Field Operating Agency

FORSIZE—Force Sizing Exercise

GFE—Government-Furnished Equipment

GIG—Global Information Grid

GSA—General Services Administration

HQ AFCA—Headquarters Air Force Communications Agency

HQ AFMC—Headquarters Air Force Materiel Command

HQ USAF—Headquarters United States Air Force

IA—Information Assurance

IDO—Installation Deployment Officer

IMO—Installation Mobility Officer

IRM—Information Resource Management

ISD—Installation Start Date

IT—Information Technology

JOPEs—Joint Operation Planning and Execution System

JP—Joint Publication

JTA—Joint Technical Architecture

JTA-AF—Joint Technical Architecture-Air Force

LAN—Local Area Network

LOGDET—Logistics Force Detail

LOGFOR—Logistics Force Packaging Systems

MAJCOM—Major Command

MANFOR—Manpower Force Packaging System

MAP—Mission Area Plans

MCP—Military Construction Program

MEFPAK—Manpower and Equipment Force Packaging System

MILCON—Military Construction

MIL-STD—Military Standard

MNS—Mission Need Statement

MOA—Memorandum of Agreement

MOU—Memorandum of Understanding

MRRR—Mobility Requirements Resource Roster

MSEL—Master Scenario Events Listing

MSP—Mission Support Plans

OCR—Office of Collateral Responsibility

O&M—Operation and Maintenance

OPR—Office of Primary Responsibility

OPSEC—Operations Security

OSHA—Occupational Safety and Health Administration

OT&E—Operational Test and Evaluation

PAD—Program Action Directive

PAO—Program Action Officer

PBSC—Performance-Based Service Contracts

PCB—Polychlorinated Biphenyl

PCO—Procurement Contracting Officer

PERSCO—Personnel Support for Contingency Operations

PID—Planning and Implementation Division

PM—Program Manager

PMD—Program Management Directive

POC—Point of Contact

POL—Petroleum, Oils, and Lubricants

POM—Program Objective Memorandum

PPBS—Planning, Programming, and Budgeting System

PPLAN—Programming Plan

PSA—Project Support Agreement

QAE—Quality Assurance Evaluator

RF—Radio Frequency

RFS—Request for Service

RLP—Rotatable Log Periodic

SAC—Support Agreements Coordinator

SATAF—Site Activation or Alteration Task Force

SORTS—Status of Resources and Training System

SOW—Statement of Work

SSG—Standard Systems Group

STEM—Systems Telecommunications Engineering Manager

STEM-B—STEM-Base Level

STEM-C—STEM-Command Level

STEM-D—STEM-Deployable

STEM E—Engineering STEM

STEM-IM—Information Manager STEM

STEM-J—Joint STEM

STEM-TM—STEM-Telecommunications Manager

TAFIM—Technical Architectural Framework for Information Management

TCTO—Time Compliance Technical Order

TFG—Total Force Group

TPFDD—Time-Phased Force and Deployment Data

TPFDL—Time-Phased Force and Deployment List

TRC—Technical Reference Code

TSR—Telecommunications Service Request

UDM—Unit Deployment Manager

UMD—Unit Manpower Document

UPMR—Unit Personnel Management Roster

UTC—Unit Type Code

VI—Visual Information

VTC—Video Teleconference

VTT—Video Teletraining

WMP—War and Mobilization Plan

USAF—United States Air Force

Terms

Acceptance—Indicates that a facility or system meets technical and performance standards but may still have minor exceptions that do not keep the facility from meeting operational and security requirements.

Acceptance Inspection—The final inspection to determine if a facility or system meets the specified technical and performance standards. It is held immediately after facility and software testing, and is the basis for certifying and accepting the communications and information system. The AF Form 1261 documents the results.

Architecture—1. A framework or structure that portrays relationships among all elements of the subject force, system or activity. 2. A description of all functional activities to be performed to achieve the desired mission, the system elements needed to perform the functions, and the designation of performance levels of those systems. An architecture also includes information on technologies, interfaces, and location of functionals and is considered an evolving description of an approach to achieving a desired mission. 3. The disciplined definition of the information technology infrastructure required by a business to attain its objectives and achieve a business vision. It is the structure given to information, applications, organizational and technological means--the groupings of components, their interrelationships, the principles and guidelines governing their design and their evolution over time.

Architecture, Infrastructure—Identifies the top-level design of communications, processing, and operating system software. It describes the performance characteristics needed to meet database and applications requirements. It provides a geographical distribution of components to locations. The service provider for these capabilities defines the infrastructure architecture. It includes processors, operating systems, service software, and standards profiles that include network diagrams showing communications links with bandwidth, processor locations, and capacities to include hardware builds versus schedule and costs.

Automated Data Processing Equipment (ADPE)—Any equipment or interconnected system or subsystems of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by a federal agency, or under contract with a federal agency which requires the use of such equipment, or requires the performance of a service, or the furnishing of a product that is performed or produced making significant use of such equipment. Such term includes computers; ancillary equipment; software, firmware, and similar procedures; services including support services; and related resources.

Base Support Plan (BSP)—The installation level plan to support unified and specified command wartime operations plans as well as MAJCOM supporting plans. It cuts across all functional support areas in a consolidated view of installation missions, requirements, capabilities, and limitations to plan for

actions and resources reporting war or contingency operations, including deployment, post-deployment, and employment activities (as appropriate).

Base Support Plan Committee (BSPC)—A group, normally consisting of senior-level leaders, that the installation commander appoints to facilitate the development of the base support plan. The BSPC serves as the focal point for the plan development and reports to the commander on the status of base support plans. It integrates base-level requirements and functional support actions into an overview of base support activity.

Blueprint Phase Implementation Directive (BPID)—Document from the STEM that reflects a portion of a Communications and Information Systems Blueprint, and authorizes and directs implementation. It may serve as the technical solution, cost estimate, and implementation directive.

Broad-gauge Technical Solutions—For efforts identified during a site visit or upon receiving a customer request, the STEM-B will outline a technical approach and an estimate of funds necessary for implementation of the requirement. This product will identify allied support, projected funding levels, and associated implementation resources for customer consideration. These tech solutions will provide estimated costs based upon the requirement (as defined at the time of request) within 30 days of the customer's request.

Category Level (C-Level)—A six-point scale showing the degree to which a unit meets standards within four measured resource areas of personnel, equipment and supplies on hand, equipment condition and training, and an overall unit assessment.

Certificate of Networthiness (CoN)—Provides the relative risk to Air Force communications and information infrastructures associated with fielding a networked system or application. A networthy system or application will not adversely impact the network and can be sustained from a communications and information perspective.

Communications-Electronics (C-E)—The specialized field concerned with the use of electronic devices and systems for the acquisition or acceptance, processing, storage, display, analysis, protection, disposition and transfer of information. C-E includes the wide range of responsibilities and actions relating to (a) electronic devices and systems used in the transfer of ideas and perceptions, (b) electronic sensors and sensory systems used in the acquisition of information devoid of semantic influence, and (c) electronic devices and systems intended to allow friendly forces to operate in hostile environments and to deny hostile forces the effective use of electromagnetic resources.

Communications and Information System—An integrated combination of doctrine, procedures, organizational structures, personnel, equipment, C-E equipment and systems, facilities, and communications designed to support a commander's exercise of command and control through all operational phases. It includes base VI support systems.

Communications and Information Systems Blueprint—Document that provides the engineering plan to modernize the base-level infrastructure with cost-effective, base-wide communications and information capability to support digital transmission of voice, data, video, imagery, and telemetry needs. It documents the baseline, identifies a target base configuration to support present and future requirements, and provides a time-phased plan and estimated costs for logical transition. The Communications and Information Systems Blueprint is sometimes referred to as the Base Blueprint or the Blueprint.

Communications and Information Systems Officer (CSO)—Identifies the supporting

communications and information systems officer at all levels. At base level, this is the commander of the communications unit responsible for carrying out base communications and information systems responsibilities. At MAJCOM, and other activities responsible for larger quantities of communications and information systems, it is the person designated by the commander as responsible for overall management of communications and information systems budgeted and funded by the MAJCOM or activity. The CSO function uses the office symbol "SC" which is expanded to three and four digits to identify specific functional areas. CSOs are the accountable officer for all automated data processing equipment in their inventory.

Communications and Information Systems Requirement—This statement identifies a communications and information systems mission shortfall or system need to the CSO. A communications and information system requirement arises when an organization cannot accomplish its current or new mission; can increase operational efficiency or cut operational costs by using advances in technologies; or can modernize an existing communications and information system by applying modern technology to satisfy evolving communications and information systems requirements, improve mission performance, and reduce current or future operation and support costs.

Command, Control, Communications, Computer, and Intelligence Support Plan (C4ISP)--A programming plan that provides early and continuing visibility into program/system development to enable supportability, interoperability and sufficiency concerns to be addressed from program inception. It is also a mechanism to raise and resolve implementation issues related to C4I infrastructure requirements, dependencies and information needs, and interface requirements among systems.

Compatibility—The capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference, defined over some range of functions of interest.

Comprehensive Plan—The combination of the general plan, component plans, special plans and studies, and maps that document a wide range of information necessary for decision making. It encompasses those specific resource documents and processes determined to be essential for planning and managing an installation's physical assets in support of the mission. The comprehensive plan is the all-encompassing description of the products, whereas comprehensive planning is the action associated with the process and implementation.

Comprehensive Planning—The ongoing civil engineering process, iterative, participatory process addressing the full range of issues affecting or affected by an installation's development. Through this process, goals and objectives are defined, issues are identified, information is gathered, alternative solutions are developed, and a sound decision-making process is employed to select a preferred alternative for implementation. It incorporates Air Force programs such as operational, environmental, urban planning, and others, to identify and assess development alternatives and ensure compliance with applicable federal, state, and local laws; regulations; and policies.

Computer Security (COMPUSEC)—The protection resulting from all measures to deny unauthorized access and exploitation of friendly computer systems.

Configuration Management—1. In computer modeling and simulation, a discipline of applying technical and administrative oversight and control to identify and document the functional requirements and capabilities of a model or simulation and its supporting databases, control changes to those capabilities, and document and report the changes. (Joint Publication [JP] 1-02, Dictionary of Military and Associated Terms) 2. A discipline applying technical and administrative direction and surveillance

to: (a) identify and document the functional and physical characteristics of a C4 system; (b) to control changes of those characteristics; and (c) record and report changes to processing and implementation status.

Designed Operational Capability (DOC) Statement—The document prepared by the parent MAJCOM that outlines each measured unit's DOC and contains the unit's identification, mission tasking narrative, mission specifics, and measurable resources. (See AFI 10-201)

Emission Security (EMSEC)—The protection resulting from all measures taken to deny unauthorized persons information of value which might be derived from intercept and analysis of compromising emanations from crypto equipment, information systems, and telecommunications systems.

Engineering Data Service Center (EDSC)—A central repository of engineering drawings and other engineering data. EDSCs receive, index, reproduce, store, distribute, and control data as authorized in AFDPD 21-4, *Engineering Data*, and AFI 21-401, *Engineering Data Storage, Distribution, and Control*.

Information Assurance (IA)—Those measures to protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and nonrepudiation (ability to confirm source of transmission and data).

Information Resource Management (IRM)—The planning, budgeting, organizing, directing, training, promoting, controlling, and management activities associated with the burden, collection, creation, use, and dissemination of information. (OMB Circular No. A-130, *Management of Federal Information Resources*)

Information System—The entire infrastructure, organization, personnel, and components that collect, process, store, transmit, display, disseminate, and act on information. (JP1-02)

Information Technology—1. With respect to an executive agency, means any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. For purposes of the preceding sentence, equipment is used by an executive agency if the equipment is used by the executive agency directly or is used by a contractor under a contract with the executive agency which (a) requires the use of such equipment, or (b) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product. 2. The term "information technology" includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources. 3. Notwithstanding subparagraphs (1) and (2), the term "information technology" does not include any equipment that is acquired by a Federal contractor incidental to a Federal contract. (CCA)

Infrastructure—1. In the C4I for the Warrior Concept, infrastructure refers to the C4I resources of the infosphere; the combination of physical resources that is global in scope, available to war fighters at all levels of command, provides access to all modes of communications and information processing services, and is operative at a prescribed level of capability at all time. 2. The common-user portion of the base-level communications and information systems environment. It includes transmission, switching, processing, system-control and network management systems, equipment, and facilities that support the base. Examples include the base telephone switch and cable plant, base communications center, and local area networks.

Installation Deployment Officer (IDO)—The host unit officer who maintains base deployment

guidance and directs and coordinates base deployments under the direction of the installation commander. Also referred to as the Installation Mobility Officer.

Integration—1. The process of bringing together parts to make whole or complete. 2. The merging of the functional and technical characteristics of existing and planned communications and information systems to ensure the resulting system is consistent with the Air Force C4 Systems Architecture (AFCSA). To be consistent, it must be interoperable and free of conflicts in purpose, schedule, and technology and must effectively and efficiently support the Air Force.

Interoperability—1. The condition achieved among communications and information systems or equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. 2. The ability of systems, units, or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together. The condition achieved among communications and information systems or items of communications and information with the exchange of information or services directly and satisfactorily between them and/or their users. Define the degree of interoperability when referring to specific cases.

Investment Plan—Translates the roadmap into required dollars and documents a funding strategy for each MAJCOM to meet specific customer needs.

Joint Technical Architecture (JTA)—1. A common set of mandatory information technology standards and guidelines to be used by all emerging systems and systems upgrades including Advanced Concept Technology Demonstrations. The JTA is applicable to C4I and automated information systems and the interfaces of other key assets with C4I systems (e.g., weapons systems, sensors). (Defense Systems Management College) 2. DoD's minimum set of rules governing the arrangement, interaction, and interdependence of the parts or elements, whose purpose is to ensure that systems conform to a specific set of requirements. It identifies system services, interfaces, standards, and their relationships. (JTA Version 3.1)

Joint Technical Architecture-Air Force (JTA-AF)—A comprehensive set of interfaces, services, and supporting formats, plus user aspects for interoperability or for portability of applications, data, or people, as specified by information technology standards and profiles. Provides corporate direction on the use of Information Technology (IT) to support Air Force missions. The JTA-AF provides a means to increase interoperability and cost-effective sharing of information. It complies with the DoD Joint Technical Architecture (JTA) while providing additional guidance for Air Force systems. The JTA-AF provides implementation timelines for these IT standards, common building blocks, and products. All of this is an aid to making informed decisions. This technical architecture advances interoperability while permitting procurement of systems that meet mission needs. The JTA-AF is a living document, undergoing a continuous cycle of assessment and resolution under control and authority of the JTA-AF Configuration Control Board (CCB).

Life-Cycle Management—1. The management of a system or item, starting with the planning process and continuing through successive management processes and associated life-cycle management phases and associated milestones, until a system is terminated. 2. A management process, applied throughout the life of an automated information system (AIS), that bases all programmatic decisions on the anticipated mission-related and economic benefits derived over the life of the AIS.

Local Area Network (LAN)—A telecommunications system, within a specified geographical area, designed to allow a number of independent devices to communicate with each other over a common

transmission topology. LANs are usually restricted to relatively small geographical areas (i.e., rooms, buildings, or clusters of buildings) and utilize fairly high data rates. Depending on the implementation, these communications networks can provide internal interchange of voice, data, graphics, video, or other forms of electronic elements.

Logistics Assessment—An assessment done during program management to determine the availability of equipment and logistics support and to determine what actions will ensure full logistics support at program completion.

Logistics Force Detail (LOGDET)—A component of the Logistics Force Packaging Systems (LOGFOR) that provides equipment and materiel requirements and summarized transportation characteristics. The LOGFOR is a Manpower and Equipment Force Packaging System (MEFPAK) subsystem.

Logistics Support—The composite of all considerations necessary to assure the effective and economical support of a system throughout its programmed life cycle. Included are: supply support, maintenance planning, test and support equipment, transportation and handling, personnel and training, facilities, data and software.

Manpower Forces Packaging System (MANFOR)—A subsystem of the MEFPAK. It provides the title of the unit or force element and its unique Joint Chiefs of Staff unit type code, the capability statement that contains the definition of unit capability, and the manpower detail by function, grade (officers only), and Air Force specialty code required to meet the defined capability.

Network—1. An organization of stations capable of intercommunication but not necessarily on the same channel. 2. Two or more interrelated circuits. 3. A combination of switches, terminals, and circuits that serves a given purpose. 4. A combination of terminals and circuits in which transmission facilities interconnect the user stations directly (i.e., there are no switching, control, or processing centers. 5. A combination of circuits and terminals serviced by a single switching or processing center. 6. A combination of information transfer resources devoted to the interconnection of three or more distinct devices, systems or gateways. 7. Two or more systems connected by a communications medium.

Operational Test and Evaluation (OT&E)—1. Testing and evaluation conducted in as realistic an operational environment as possible to estimate the prospective system's military utility, operational effectiveness, and operational suitability. In addition, OT&E provides information on organization, personnel requirements, doctrine and tactics. Also, it may provide data to support or verify material in operating instructions, publications, and handbooks. 2. Testing and evaluation conducted in as realistic conditions as possible throughout the system's life cycle. Tests are conducted to verify that an information system is installed and capable of performing its operational mission as outlined in program documentation. OT&E is used to verify operating instructions, computer documentation, training programs, publications and handbooks.

Performance Measurement—The assessment of effectiveness and efficiency of IT in support of the achievement of an organization's missions, goals, and quantitative objectives through the application of outcome-based, measurable, and quantifiable criteria, compared against an established baseline, to activities, operations, and processes. (*DoD Guide for Managing IT as an Investment and Measuring Performance*, February 10, 1997)

Program—1. A combination of program elements designed to express the accomplishment of a definite objective or plan that is specified as to the time-phasing of what is to be done and the means proposed for its accomplishment. Programs are aggregations of program elements and, in turn, aggregate to the total

Future Years Defense Program. 2. In computing, a sequence of instructions used by a computer to perform a particular function or solve a given problem. 3. For the purpose of this instruction, a program is a formally documented plan to acquire new, modified, additional, or expanded communications and information resources or to remove specified resources to satisfy a requirement. A program includes documentation prepared by the communications and information systems engineer that translates a requirement document into the engineering, supply, and installation data necessary to establish or change a communications and information system capability. Programs are broken into projects for implementation at a specific location. It is a group of related projects that are managed in a synchronized way.

Program Action Directive (PAD)—A formal planning document used to facilitate and record the accomplishment of a major action such as the reorganization or formation of a MAJCOM, organization, unit, or function. The PAD is also used to provide program direction on new acquisitions and modifications. It states the objective, defines a concept of operations, assigns specific tasks to OPRs and OCRs, and establishes milestones.

Program Action Officer (PAO)—The POC assigned to assist the program manager with the implementation of the requirement. PAOs may be located within the appropriate office of the Air Force functional manager and the participating, supporting, operating, and implementing commands.

Program Cost—The total of all expenditures, in any appropriation or fund, directly related to the automated information system definition, design, development, and deployment, and incurred from the beginning of the “Concept Exploration” phase through deployment at each separate site. For incremental and evolutionary program strategies, program cost includes all increments. Program cost does not include operations and support costs incurred at an individual site after operational cutover of any increment at that site, even though other sites may exist that have not yet completed deployment. (AFI 10-601)

Program Manager (PM)—A general term of reference to those organizations directed by individual managers, exercising authority over the planning, direction, and control of tasks and associated functions essential for support of designated weapons or equipment systems. The authority vested in this organization may include such functions as research, development, procurement, production, materiel distribution, and logistic support, when so assigned (JP 1-02). The individual in the implementing command who has authority and responsibility for managing a program. There is only one PM for a given program but a PM may manage more than one program.

Program Management Directive (PMD)—The official Air Force document used to direct acquisition or modification responsibilities to appropriate Air Force MAJCOMs for the development, acquisition, or modification of a specific weapon system, subsystem, or piece of equipment. It is used throughout the acquisition cycle to terminate, initiate, or direct research; development; production; or modifications for which sufficient resources have been identified. States program unique requirements, goals, and objectives, especially those to be met at each acquisition milestone or program review.

Project—A temporary endeavor, undertaken to create a unique product or service, usually planned, executed, and controlled by people and constrained by limited resources. It is a group of activities performed in a logical sequence to meet one or more basic objectives. These actions are done to create change, implement strategic plans, fulfill contractual agreements, solve specific problems, or launch a new product or service. A project has a date of commencement and a date of completion.

Project Management—The applications of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. The “art” of directing,

controlling and coordinating human and material resources throughout the life of a project by using modern management techniques.

Project Manager—A single point of responsibility for a project. This function will vary in degree of responsibility from one organization to another. Personnel in this position oversee the technical work performed by other functional areas. Responsibilities require technical and organizational management skills.

Project Officer—An individual, military or civilian, who is responsible for a planned undertaking or assignment to accomplish something specific. The project assigned is usually of limited life and not normally already established within organizational and supervisory channels (AFDD 1-2, *Air Force Glossary*).

Project Plan—Formal document that is used to manage and control project execution.

Project Support Agreement (PSA)—A document prepared by the communications and information systems program engineer that describes: what equipment to install, sites agreed on; supporting construction; services required; operational, technical, or other constraints affecting a communications and information systems requirement; and the responsibilities of the host base civil engineer, base communications and information systems staff, and other supporting activities, including the user.

Request For Service (RFS)—A validated request for long-haul communications services or facilities prepared in a telecommunications service request (TSR) format as prescribed in Defense Information Systems Agency Circular (DISAC) 310-130-1, *Submission of Telecommunications Service Requests* (see AFI 33-116).

Requiring Command—The MAJCOM, field operating agency (FOA), or Air Force functional manager that needs a communications and information system, service, or capability.

Risks—Types of risk may include schedule risk, risk of technical obsolescence, cost risk, risk implicit in a particular contract type, technical feasibility, dependencies between a new project and other projects or systems, the number of simultaneous high risk projects to be monitored, funding availability, and program management risk. (OMB Circular No. A-130)

Risk Management—1. Appropriate techniques should be applied to manage and mitigate risk during the acquisition of information technology. Techniques include, but are not limited to: prudent project management; use of modular contracting; thorough acquisition planning tied to budget planning by the program, finance and contracting offices; continuous collection and evaluation of risk-based assessment data; prototyping prior to implementation; post implementation reviews to determine actual project cost, benefits and returns; and focusing on risks and returns using quantifiable measures. (FAR 39) 2. Risk management is the process used by decision-makers to reduce or offset risk. The risk management process provides leaders and individuals a systematic mechanism to identify and choose the optimum course of action for any given situation. Risk management must become a fully integrated element of planning and executing an operation (See AFPD 90-9, *Operational Risk Management*; AFI 90-901, *Operational Risk Management*; and AFPAM 91-215, *Operational Risk Management (ORM) Guidelines and Tools*).

Roadmap—Documents the current baseline to the target base configuration to support present and future requirements, and provides a time-phased transition plan.

Self-Help Project—A communications and information systems requirement satisfied by the local communications unit using available base resources (manpower, materiel, technical expertise, and so

forth), including contractual services. 38 EIG normally does not provide installation services to self-help projects. Coordinate significant self-help projects that may impact the base infrastructure with the STEM-B, before implementation.

Status of Resources and Training System (SORTS)—A Joint Chiefs of Staff-controlled, automated data system primarily created to provide the National Command Authorities and Joint Chiefs of Staff with authoritative identification, location, and resource information. It is used throughout the chain of command to measure the daily resource status of operating forces.

Strategic Information Resources Management (IRM) Planning Process—Processes which consist of the following components: how the management of information resources promotes the fulfillment of an agency's mission; the use of information throughout its life cycle; operational information technology planning, and links to other planning processes including strategic, human resources, and financial resources. (OMB Circular No. A-130)

Support Force Sizing Exercise (FORSIZE)—Manpower assessment of Air Force total force wartime requirements (in place and deployment) based on Defense Planning Guidance and the ability to meet that demand. Shortfalls and overages are then considered by Air Force decision makers for resource action during Program Objective Memorandum preparation. In-place requirements are determined during the Base Level Assessment. In this analysis phase, base-level functional planners along with operational, logistic and manpower planners identify the minimum essential manpower needed to support continuing base-level missions.

Systems Telecommunications Engineering Manager (STEM)—A communications and information systems engineer who provides technical engineering planning services in support of communications and information systems and base infrastructures. The base-level STEM (STEM-B) has technical responsibility for engineering management and assists the base CSO in system engineering and configuration control. The STEM-C provides technical assistance to the MAJCOM and coordinates with STEM-Bs on future MAJCOM mission changes, programs and efforts at the MAJCOM level. The STEM-D assists MAJCOM on deployment issues. The STEM-J is assigned to CINCs, Joint Staff and DISA to promote interoperability by providing an interface between those activities and the Air Force MAJCOMs and bases. The Systems Telecommunications Engineering Manager-Telecommunications Manager (STEM-TM) assists the STEM-B, C, and D.

Time-Phased Force and Deployment Data (TPFDD)—The Joint Operation Planning and Execution System (JOPES) database portion of an operation plan; it contains time-phased force data, nonunit-related cargo and personnel data, and movement data for the operation plan, including: a. In-place units. b. Units to be deployed to support the operation plan with a priority indicating the desired sequence for their arrival at the port of debarkation. c. Routing of forces to be deployed. d. Movement data associated with deploying forces. e. Estimates of nonunit-related cargo and personnel movements to be conducted concurrently with the deployment of forces. f. Estimate of transportation requirements that must be fulfilled by common-user lift resources as well as those requirements that can be fulfilled by assigned or attached transportation resources. (See JP 1-02)

Time Phased-Force and Deployment List (TPFDL)—Appendix of the operation plan. It identifies types or actual units required to support the operation plan and indicates origin and ports of debarkation or ocean area. It may also be generated as a computer listing from the time-phased force and deployment data. (See JP 1-02)

Unfunded Requirement—Resources needed to perform workloads or missions that have competed for

funding in a POM exercise but have not been supported due to fiscal constraints, ceilings, etc.

Unit Type Code (UTC)—A five-character, alphanumeric designator that uniquely identifies each type unit of the Armed Forces. (JP 1-02)

Video Teleconferencing (VTC)—A two-way, electronic form of communications that permits two or more people in different locations to engage in face-to-face audio and visual communications for the purpose of conducting meetings, seminars, and conferences. A VTC system typically includes a telecommunications system, video compression equipment, and video, audio, and graphics components. DoD VTC equipment must conform to standards in the Corporation for Open Systems International VTC profile that incorporates international standards for VTC.

Video Teletraining (VTT)—An electronic form of communications that uses high quality video, audio, and graphics equipment for the purpose of conducting training and education programs for students that are geographically separated from the instructor. The Air Technology Network is the Air Force Standard VTT network.

War and Mobilization Plan (WMP)—The Air Force supporting plan to the Joint Strategic Capabilities Plan. The six volumes of the WMP extend through the Future Years Defense Program to provide continuity in short-and mid-range war and mobilization planning. It provides current planning cycle policies and planning factors for the conduct and support of wartime operations. It establishes requirements for development of mobilization and work plan programs to support sustained contingency operations of the programmed forces. The WMP encompasses all functions necessary to match facilities, manpower, and materiel with planned wartime activity (AFDD 1-2).

Work Plan—Captures the investment plan elements that the MAJCOM expects to fund organically and/or by contract. The work plan is prioritized by the MAJCOM based upon operational needs and funding availability. Identifies key decisions, assigns responsibilities, and authorizes specific resources and actions to develop and implement a communications and information system.

Attachment 2

ARCHITECTURES, TEMPLATES, COMMUNICATIONS AND INFORMATION SYSTEMS BLUEPRINTS, AND THE STEM

A2.1. Architecture. Defines the current, existing, baseline operations, systems, or conditions while providing an action plan, and an investment strategy or blueprint for the future. MAJCOMs refine and tailor Air Force architectures to meet unique mission requirements. There are three major perspectives, i.e., views that logically combine to describe an architecture. These three architecture views are the operational, systems, and technical views.

A2.1.1. Operational Architecture. The operational architecture view is a description of the tasks and activities, operational elements, and information flows required to accomplish or support a military operation.

A2.1.2. Systems Architecture. The systems architecture view is a description, including graphics, of systems and interconnections providing for, or supporting, warfighting functions.

A2.1.3. Technical Architecture. The technical architecture view is the minimal set of rules governing the arrangement, interaction, and interdependence of system parts or elements, whose purpose is to ensure that a conformant system satisfies a specified set of requirements.

A2.2. Communications and Information Systems Blueprints. This is the base road map for the evolution of its communications and information systems infrastructure. The STEM-B prepares and maintains the Communications and Information Systems Blueprint for the base's wing commander and CSO. Communications and Information Systems Blueprints:

A2.2.1. Give the engineering overview required to implement the communications and information systems infrastructure at a specific location.

A2.2.2. Depict requirements for current and planned communications and information systems infrastructure, a schedule for implementing planned systems, and the estimated resources needed to accomplish the transition.

A2.2.3. The STEM-B manages the Communications and Information Systems Blueprint program. The STEM:

A2.2.3.1. Prepares, updates, authenticates, and releases the Communications and Information Systems Blueprint according to [Attachment 3](#).

A2.2.3.2. Makes sure the Communications and Information Systems Blueprint reflects the most current information available.

A2.2.3.3. Identifies digital data requirements and any discrepancies in CSIR information to the communications and information EDSC.

A2.2.3.4. Coordinates with the base communications and information systems plans and implementation section to verify the accuracy of Communications and Information Systems Blueprint information.

A2.3. System Telecommunications Engineering Manager (STEM). STEMs are engineers located within 38 EIG Planning and Implementation Divisions (PID) or its subordinate units who help define and

plan future requirements for all bases. STEMs serve MAJCOM, wing commanders, and CSOs as communications and information systems technical advisors to help manage and control the existing and future communications and information systems configuration.

A2.3.1. MAJCOM STEM (STEM-C). Provides technical assistance to MAJCOMs and STEM-Bs. They also:

A2.3.1.1. Act as technical consultants and serve as a single point of contact to MAJCOMs.

A2.3.1.2. Assist and support MAJCOMs in POM submissions by providing costs, technical information, technical justifications, and solutions.

A2.3.1.3. Evaluate and review communications and information systems blueprints to ensure consistent compliance with DoD, Air Force, and MAJCOM architecture.

A2.3.1.4. Coordinate with STEM-Bs on future MAJCOM mission changes, programs, and efforts and ensure compliance.

A2.3.2. Base-Level STEM (STEM-B). The STEM-B:

A2.3.2.1. Serves the wing commander and CSO as a communications and information systems technical consultant and assists the CSO in communications and information system configuration control.

A2.3.2.2. Develops, updates, and maintains the base Communications and Information Systems Blueprint, which includes the communications and information system baseline infrastructure.

A2.3.2.3. Serves the user, communications and information planner, and CSO by helping define user mission needs (when required) and, when those needs dictate a materiel solution, defines and clarifies user requirements.

A2.3.2.4. Plans, designs, costs and reviews technical solutions to user requirements when the CSO requests assistance.

A2.3.2.5. Plans and integrates base communications and information requirements and works to limit or eliminate duplication.

A2.3.2.6. Reviews communications and information systems for architectural compliance.

A2.3.2.7. Integrates communications and information systems and proposes implementation schedules.

A2.3.2.8. Reviews military construction project (MCP) plans, the base comprehensive plan, and communications and information systems specifications for the impact on systems.

A2.3.3. Deployability STEM (STEM-D):

A2.3.3.1. Serves as technical advisor for MAJCOMs, bases, STEM-Cs, and STEM-Bs on deployment issues.

A2.3.3.2. Documents command-unique deployable systems, deployable system requirements, and MAJCOM deployment issues in a command deployable blueprint.

A2.3.3.3. Provides identification of base deployable systems to the STEM-B for inclusion in the base communications and information systems blueprint.

A2.3.3.4. Documents relevant Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems available to each Aerospace Expeditionary Force (AEF) unit to ensure interoperability during in-garrison training with other AEF units and the HQ ACC AEF Center.

A2.3.3.5. Prepares base communications and information systems blueprints for contingency sites not supported by other MAJCOMs.

A2.3.3.6. Performs end-to-end network performance analysis as requested by MAJCOMs, the HQ ACC AEF Center, and joint commands to optimize bandwidth usage and system performance over theater and wide area links.

A2.3.4. Joint STEM (STEM-J) works with joint agencies (e.g., the unified commands, DISA, and the Joint Staff). Their focus is on the Global Information Grid (GIG) and Joint Agency C4ISR systems planning to include planning/assessing impact of programs on the infrastructure.

A2.3.5. Technical Manager STEM (STEM-TM), Information Manager STEM (STEM-IM), and Engineering STEM (STEM-E) assist the STEM-B and C.

Attachment 3**COMMUNICATIONS AND INFORMATION SYSTEMS BLUEPRINT DEVELOPMENT,
REQUIRED DOCUMENTS, AND CONTENT**

A3.1. Introduction to Communications and Information Systems Blueprint Development. The base Communications and Information Systems Blueprint is a host wing and MAJCOM approved planning document. It covers the existing base infrastructure baseline, on-going programs, and short- and long-range planned systems. As such, the Communications and Information Systems Blueprint gives a broad picture of what the base communications and information infrastructure should be. It identifies communications and information requirements, acts as an implementation plan, and serves as an authority to expend the necessary resources.

A3.1.1. As an implementation plan the Communications and Information Systems Blueprint breaks into phases, attaches a broad-gauge cost to each phase, and is a basis for the Blueprint Phased Implementation Directive (BPID).

A3.1.2. The BPID serves as an authorization document to implement a specific portion of the Communications and Information Systems Blueprint. The STEM may break BPIDs down into smaller phases, called elements, to provide additional flexibility to incrementally implement the phases, as operational mission needs and funding constraints dictate.

A3.2. The Communications and Information Systems Blueprint Process . The STEM-B develops and maintains the blueprint. The STEM-B works jointly with the customer (MAJCOMs and bases) and the STEM community to produce the most viable product possible. The process entails capturing and validating new communications and information requirements, comprehensive data gathering, MCP reviews, analysis, and continual update. Data is obtained by base surveys and through various other sources (such as coordination with base-level, SSG, and ESC program offices, databases, etc.). Data on existing communications and information systems is updated on the CSIRs according to AFI 21-404.

A3.2.1. After the host wing substantiates and approves the Communications and Information Systems Blueprint, the MAJCOM approves it as the base's overall communications and information plan. This may authorize implementation of requirements defined within the communications and Information Systems Blueprint once funding is approved.

A3.2.2. When the base determines to fund a phase in a Communications and Information Systems Blueprint, the base CSO advises the STEM-B to produce a BPID in coordination with the requiring activity and applicable base supporting activities (e.g., BCE, wing manpower, spectrum management). If the system user or requiring activity wishes to use 38 EIG as the implementation source, the STEM-B forwards the requirement to the PID chief for assignment of a program manager. (**NOTE:** With BPID submission, the customer authorizes the implementation of a phase, or portion of a phase, as long as the required funding will not exceed the cost stated on the BPID.) A phase may cover a larger scope than a "single stand-alone" requirement and, it is the customer's option to select what elements of a phase to implement. Large phases may have more than one BPID for ease of implementation. The STEM-Cs coordinate with MAJCOMs to verify funds and placement on the MAJCOM work plan.

A3.2.3. After PM appointment, the PM forms an implementation team and plans a survey. The PM requests survey funds when the funding requirements are known. The survey verifies that the scope

of work in the BPID is within cost and is detailed enough to write the PSA/support document. (**NOTE:** A PM most likely will not be appointed when dealing directly from the base with a contractor. In these cases the base-level communications and information systems planner fulfills these duties.)

A3.2.4. The PM provides the customer with program and funding schedules. The funding schedule delineates which types of funds are necessary, who pays, and the fiscal year funds are required. The PM coordinates problems with the base communications and information systems planner, the user, and STEM-B to resolve the issues before proceeding with the PSA/support document and implementation of the project.

A3.3. Development. The STEM-B:

A3.3.1. Documents or updates the communications and information systems baseline.

A3.3.2. Surveys requirements and interfaces with the base CSO, the user, the base civil engineer, and other relevant functional areas.

A3.3.3. Assists in defining and clarifying communications and information systems requirements.

A3.3.4. Plans, designs, costs, develops, and reviews the technical solution.

A3.3.5. Develops strategies to upgrade communications and information systems and the infrastructure.

A3.3.6. Proposes the implementation schedule.

A3.3.7. Completes and publishes the Communications and Information Systems Blueprint.

A3.4. Required Documents. The required documents are:

A3.4.1. A complete and accurate copy of the base cable assignment records.

A3.4.2. A copy of the base comprehensive plan or relevant portions of the plan.

A3.4.3. A copy of all civil engineering drawings showing supporting structures for communications and information systems.

A3.4.4. A copy of each communications and information systems requirement that may impact the communications and information systems infrastructure.

A3.4.5. A list of personal communications system (cellular and land mobile radio) net and system diagrams.

A3.5. Content. The Communications and Information Systems Blueprint contains:

A3.5.1. Executive summary.

A3.5.2. Background.

A3.5.3. Communications and information systems environment.

A3.5.4. Target communications and information systems architecture.

A3.5.5. Transition strategy.

A3.5.6. Communications and information systems cost summary.

A3.5.7. Blueprint implementation plan (BIP).

A3.5.8. Appendices, glossary and index.

Attachment 4

FUNDING AND WORK PLAN

A4.1. Requirement Funding. To get funding for communications and information projects, you must translate manpower and technical requirements into concrete financial needs. The Air Force Planning, Programming, and Budgeting System (PPBS) and AFPD 65-6 and its associated instructions explain this process.

A4.1.1. The first place the user looks for funding is local base resources. The installation budget office can be helpful in identifying sources and types of funding. If funding is not available at base level, the user may request resources from or submit an unfunded requirement to the next higher echelon. Throughout the planning processes, MAJCOMs and the engineering, implementing, procuring, and supporting activities must continue to identify and refine resource requirements needed to achieve program objectives. The USAF Program Objective Memorandum (POM) identifies the resources needed to fund the program. In addition, Air Force PMs and MAJCOMs must make sure communications and information requirements that approve and fund program and project requirements are properly time-phased and included in the appropriate fiscal year budget. MAJCOMs include communications and information systems O&M, EI, and investment costs in their budget submissions. The communications and information systems planner helps the users make sure their MAJCOM's POM submission includes their requirements.

A4.1.2. Ensure the appropriate spectrum supportability is accomplished prior to purchasing any Radio Frequency (RF) equipment or entering into any contractual obligations involving the use of RF dependent devices (refer to AFI 33-118).-

A4.2. Budgeting for Operations and Maintenance Support. MAJCOMs budget for communications and information systems O&M support costs through their annual budget submissions. These costs include installation support equipment, such as, cranes and fork lifts; installation support construction up to \$15K; and post-installation equipment maintenance, and services and supplies. See AFI 65-601V1 and appropriate MAJCOM supplements for specific procedures and responsibilities for preparing budget submissions.

A4.3. Budgeting for Investment Items (Appropriation 3080). Many budget program activity codes (BPAC) are in this category of funding and each has its own rule in the budget process. "Other Procurement" (Appropriation 3080), BPAC 83XXXX is commonly used for acquiring communications and information systems and equipment. The BPAC for other common equipment at base level is BPAC 84XXXX. Budget for BPAC 83XXXX and 84XXXX through the POM at MAJCOM and HQ USAF levels. Consult the budget officer for more detailed information. Follow the rules outlined in AFI 65-601V1. The user and communications and information systems planner must stay aware of the funding status of requirements at all times.

A4.4. Work Plan Process. Keep 38 EIG informed about the funding status of user requirements. Implementing a communications and information requirement using EI resources is a formal planning process that matches the capabilities of the servicing EI activity to base communications and information needs. The 38 EIG holds periodic work plan process workshops called TFGs with MAJCOMs and involved agencies to discuss EI issues, agree on funding, and prepare implementation schedules for executable

projects. The resulting work plan projects future requirements and sets MAJCOM priorities for the next fiscal year and for future years. (**NOTE:** MAJCOM submissions include a prioritized listing of all command requirements, if requirements are EI implementation candidates. Organic resources are subject to unplanned contingencies and may deploy at anytime.) These priorities may differ from those of the Air Force-level program office.

A4.4.1. Base-Level Input for Work Planning. Each MAJCOM tasks its subordinate wing's or direct reporting units' (DRU) CSO to review the need for each project that EI accomplishes and to provide a consolidated list (base-level work plan) of projects in priority order. Lists must include operational impact statements to justify MAJCOM funding. In addition, the CSO reviews the status of related activities that affect project implementation (e.g., support construction or MCP completion dates, equipment availability, host nation approval, or connectivity issues). MAJCOMs consolidate individual wing submissions into a MAJCOM work plan that is comprehensive and assigns priority to projects. MAJCOMs formally approve any departure that EI proposes to make from the command's priority listing.

A4.4.2. TFG Work Planning. Captures the investment plan elements that the MAJCOM expects to be funded. The work plan is prioritized by the MAJCOM based upon operational needs and funding availability. The TFG conference consists of the 19 Air National Guard (ANG) units and the 738 EIS. It serves as a forum to discuss and resolve organic implementation issues and to facilitate teaming on MAJCOM projects to meet TFG training requirements. The MAJCOMs will select and submit projects they wish to include in the TFG implementation process. The TFG will review the proposed projects for possible organic implementation and select projects based upon the projected training needs of the TFG. If selected, the ANG units or the 738 EIS will engineer the project and implement organically. The TFG will return nonselected projects to the MAJCOM for contract implementation. The TFG meets formally twice a year to review MAJCOM work plans and via teleconference monthly to consider MAJCOM out-of-cycle requirements.

A4.4.3. Work Planning for Other Than-Air Force Activities. The EI work plan suffices, as an agreed position between participating Air Force activities, but it may not for other than Air Force activities. Determine if you must draft a definitive agreement such as a MOA or a MOU for transactions supporting non-Air Force requirements.

Attachment 5

PROJECT PLANNING PROCESS

A5.1. General. Be sure to consider the factors listed here during the planning process to ensure the successful integration of a communications and information system into the base infrastructure.

A5.2. Access Roads. Temporary or permanent roads for site construction and installation or normal O&M of a communications and information system may be required. Allow plenty of time and money for their construction.

A5.3. Tools and Test Equipment. Make sure necessary equipment, including maintenance equipment, is available when required. Clearly define procedures and responsibilities in the early stages of the project to make sure equipment comes in on time and under budget.

A5.4. Financial Constraint. Plan for existing and anticipated financial constraints. Do not waste time preparing a project plan and completing all the documentation if the project costs will exceed approval limits and MAJCOM or Air Force funds are not available. Consider alternative solutions.

A5.5. Circuit Requirements. Provide communication circuits as part of the system installation. Determine circuit requirements and submit a request for service (RFS) early in the project to meet the required date according to AFI 33-116.

A5.6. Contract Monitoring. Monitor contracts to help the procurement contracting officer (PCO) or the administrative contracting office (ACO), if delegated by the PCO. Review and approve contractor products and schedules, participate in acceptance tests, and provide technically qualified on-site monitors during contractor installation, operation, and maintenance, as needed.

A5.7. Contractual Requirements. In addition to the major equipment or installation contract, a contract to provide support facilities such as antenna pads, trenching and backfill, access roads, shelters, and security fencing may be needed. Adjust completion dates of these contracts to fit into the overall project implementation schedule.

A5.8. Contract Support. Contract support for manned or unmanned facilities may be required. Learn to recognize requirements early and coordinate with programming and procurement agencies.

A5.9. Construction. Plan for any minor construction that may be necessary to provide an adequate physical environment for communications and information systems equipment. This may include modifying existing structures, designing and building new structures, providing primary and backup power, building or modifying towers, pads, foundations and underground ducts, and providing environmental control equipment.

A5.10. Cutover Plan. If necessary, develop a plan for discontinuing service from one facility or equipment and simultaneously initiating service with another. The cutover plan defines methods, equipment, circuits, and other actions that must occur to transfer services. It can be quite complicated to interface

commercially leased and government-owned equipment. You will usually need temporary agreements between the Air Force and the contractor to accomplish this task.

A5.11. Easements. Work with the BCE and legal office to develop miscellaneous formal agreements (e.g., to get access to farmland to maintain buried cable or to restrict construction or activity in the vicinity of radiating or receiving devices).

A5.12. Environmental Control. Consider the need to control temperature, humidity, and air quality within a given area. Environmental control costs can be a considerable part of the installation effort.

A5.13. Equipment Removal or Relocation. Certain projects use equipment available from another location. Consider manpower, time, and costs associated with removing, packing, shipping, and servicing this equipment.

A5.14. Entry Rights. A formal agreement with property owners or custodians to gain access to property for specified purposes (e.g., site survey and testing) may be needed.

A5.15. Equipment Storage. Allow enough space to assemble and securely store equipment, project materiel, spares, and test equipment. Figure out how much time and space is needed and arrange firm commitments with the host base or off-site contracted storage facilities. Tell procurement and the installing activity the storage facility location.

A5.16. Flight Checks. Use flight checks to determine the capability and acceptability of a flight-supporting communications and information system after installation, upgrade, or retrofit. Identify flight check requirements in the project, phase them into the implementation schedule, and task the appropriate flight check agency to support the check.

A5.17. Frequency Authorization. Determine the proposed frequencies based on intended operational use, equipment limitations, geographical and environmental location, and host country authorizations. Submit a frequency authorization request and make sure you get approval by established milestones (see AFI 33-118).

A5.18. Host Nation Approval and Connection Approval. Communications and information systems, frequencies, and circuits for use outside the continental United States may require approval from the host government. Since getting host nation approval and connection approval is a long process, initiate it as soon as possible in the planning processes. The responsibility for getting the approval rests with the theater commander but may be delegated to the component command agency most closely associated with the requirement. The base communications and information systems planner must coordinate with the requiring activity and the theater or component command communications and information systems staff agency to prepare, submit, and monitor the status of Host Nation Approval and Connection Approval for communications and information systems.

A5.19. Human Engineering. Operate and maintain equipment, facilities, and systems efficiently and effectively within limitations of available personnel. Include human factor limitations in the statement of operational requirements. Consider factors like personnel comfort, safety, equipment size and weight,

floor plan layouts, lighting, control location, legibility of markings, fault alarms, site accessibility, and skill level of O&M personnel.

A5.20. Interface Requirements. Connecting two systems or facilities together may require an interface. Where two systems connect, a third device may be needed as a translator.

A5.21. Joint Occupancy. Two or more organizations may use the same area or structure. When considering joint occupancy, formulate an agreement that defines responsibilities and tasks. DoDI 4000.19, *Interservice and Intragovernmental Support*, and AFI 25-201 govern interagency agreements. Consider the impact of these agreements on schedules, funding, materiel, manpower, personnel, and training.

A5.22. Life-Cycle Cost Benefits. Determine whether benefits of the expected life of a system or facility are worth the cost, or if leased, whether length of the contract is worth the overall cost.

A5.23. Maintenance Concept. Consider policy and procedures necessary for maintaining a C4 system. Concept should include location, number of like equipment, proximity to other sites, backup facilities, manpower training, and on-site versus in-shop repair.

A5.24. Manpower. Coordinate with the wing manpower office and other staff agencies to determine personnel needed to support the stated operation. Establish realistic milestones to provide manning for the requirement if applicable. Consider the time required to establish new manpower authorizations. Also include time required to train personnel.

A5.25. Operating Procedures. Determine if existing operating procedures work for the proposed facility. Where new or modified procedures are needed, establish milestones for preparing, compiling, reproducing, and distributing these procedures or changes to operating units or locations.

A5.26. Physical Security. These requirements vary with the type of communications and information systems facility and are affected if the system processes classified information or uses COMSEC equipment. Remote, unattended sites and those that contain a potential hazard to personnel may require installation of security devices or special construction to prevent entry by unauthorized people.

A5.27. Site Surveys. You may need to arrange on-site visits by an engineer or engineering team to select suitable equipment locations, establish requirements for major and minor construction, power, and environmental control, and identify base support required during installation. Formalize the results of these visits in a PSA/support document (see [Attachment 6](#)).

A5.28. Software. Automated Data Processing (ADP) programs are sometimes developed for test, operation, or maintenance of communications and information systems. Consider software development and debugging time when establishing schedules. All software must follow the C4ISP process (see [Attachment 6](#)).

A5.29. Statement of Work (SOW). The SOW specifies the type of work, the quantity of work required, and the services a contractor must provide. The SOW may also require the contractor to provide end items of equipment. Equipment performance exhibits, which are part of the SOW, define technical

requirements of equipment. The base procurement office can provide examples of SOWs. Instructions for writing a SOW are found in AFI 63-124.

A5.30. Structural Analysis. A structural analysis evaluates the engineering of an existing or planned structure to determine whether it can accommodate equipment adequately and safely. While normally applicable to towers, you should also obtain a structural analysis when installing heavy equipment in existing buildings. Engineering time factors are critical; particularly where there are existing structures and you do not have their basic design data.

A5.31. EMSEC. If you fail to consider compromising emanations, a breach in security may occur. Follow the established criteria for physical, mechanical, acoustical, and electromagnetic security of areas processing classified information.

A5.32. Test Plan. This document, developed before installation is complete, tells how to test a communications and information system to confirm that it functions as required. Identify any special test equipment in the test plan and include it in the programming document. Also consider the composition, skills, source, and cost of deployment of the test team and how long to conduct tests.

A5.33. Environmental Concerns. Determine the impact of such environmental concerns as asbestos removal, wildlife preservation (including endangered species), and historical buildings have on project implementation. Also consider geographical location and operating environment when determining such factors as air conditioning, special treatment of equipment for protection against humidity, fungus, and salt spray. Extremes in climate during certain months may affect installation and program schedules. Examples of this are: erecting towers in high winds and low temperatures; burying cables in frozen ground; moving heavy equipment on unimproved roads in the rainy season; and storing some materiel outside. See AFI 32-1021 for more information.

Attachment 6

C4ISP AND PSA SUPPORT DOCUMENT INFORMATION

A6.1. C4ISP Information.

A6.1.1. Early identification and continuing refinement of C4I support requirements will significantly increase the probability of efficient and effective fielding of systems. The C4ISP provides visibility into program/system development in order to define C4I support requirements, dependencies, and shortfalls. Compliance with policies in the DoD Acquisition Deskbook on architecture products for the C4ISP and the development of those architecture products in accordance with DoD's Architecture Framework is mandatory for all Air Force programs.

A6.1.2. Some information contained within a C4ISP may be classified because of sensitive information associated with the system (e.g., vulnerabilities associated with systems, weapon system response times to detected threats, employment rates, deployment sites). C4ISPs developed for classified systems and classified portions are handled according to current security policies. However, all C4ISPs, whether classified or not, will adhere to the same development, evaluation, and coordination requirements.

A6.1.3. Networkiness:

A6.1.3.1. Networkiness describes the relative risk associated with fielding a networked system or application. A fully networky system or application can be practically implemented and sustained in an operational environment.

A6.1.3.2. Some factors that enter into networkiness determination include network security, network impact, compatibility with the network, supportability (manpower, training, and logistics), compliance with architecture standards, and adherence to Air Force spectrum use policy.

A6.1.3.3. Networkiness is determined by reviewing the C4ISP and completing a "network risk assessment." Network risk assessment is a subset of networkiness determination. The network risk assessment and associated testing is accomplished to measure parameters that quantify the system/application in terms of network security, network impact, and compatibility with the communications and information infrastructure.

A6.1.3.4. The network risk assessment will typically include laboratory testing. Testing will normally be accomplished at a government testing facility like the Air Force Network Test Center at AFCA. Testing models that simulate the intended base networks may be used for network risk assessment testing.

A6.1.3.5. The schedule and details for network risk assessment are developed and coordinated by AFCA and the PM as one of the first steps of the C4ISP process. The particulars of network risk assessment and associated schedule are dependent on the system design complexity, intended environment, and potential impact.

A6.1.3.6. The signed CoN is the culmination of networkiness determination. It signifies that the appropriate supporting documentation (descriptions, analysis results, test results) is contained within the C4ISP, the pertinent requirements outlined in the C4ISP have been met and/or there is an acceptable plan to resolve the shortfalls, and the system has been deemed to be networky.

A6.1.3.7. For Acquisition Category (ACAT) I, IA, II, III and other Air Force-wide systems, Air Force Chief Information Officer (AF-CIO) signs the CoN. (See AFI 10-601 for details on ACATs)

A6.1.3.8. For MAJCOM-unique systems, the MAJCOM-CIO is the networthiness approval authority.

A6.1.4. Applicability.

A6.1.4.1. New systems:

A6.1.4.1.1. Develop C4ISPs and obtain Air Force CoNs for all new and developing ACAT I, IA, II, and III programs. These processes are performed for systems that exchange information in any form electronically with other programs/systems, or that give the warfighter or DoD decision maker an operational capability that depends on timely, effective C4I infrastructure support.

A6.1.4.1.2. Develop C4ISPs for all new Air Force, MAJCOM-unique, or base-level systems/products that are managed using AFI 33-103 processes. Obtain Air Force CoNs for Air Force-wide and Air Force advocated systems/products.

A6.1.4.1.3. MAJCOMs will determine development/coordination processes associated with MAJCOM-unique and base level projects.

A6.1.4.2. Existing/legacy systems:

A6.1.4.2.1. Every three years, communications and information systems are required to be re-evaluated and security certification and accreditation (C&A) packages updated. If no C4ISP exists, one must be developed, networthiness assessed and a CoN issued. If a C4ISP and CoN have previously been accomplished, they must be updated.

A6.1.4.2.2. Major upgrades/changes trigger C4ISP development/update and a CoN.

A6.1.4.2.3. For minor upgrades/changes to communications and information systems, an impact statement will be provided to AFCA. This statement will be "annexed" with the original C4ISP/CoN of the parent product or filed until a C4ISP is completed. For systems/products associated with a government PM or sustainment manager, the management office submits this statement. Air Force Information Warfare Center (AFIWC)/Air Force Computer Response Team (AFCERT) submits the impact statement for all others. **NOTE:** For more guidance on the development of the C4ISP and CoN go to <http://www.afca.scott.af.mil/c4isp> and <http://www.afca.scott.af.mil/con>.

A6.2. PSA/Support Document Information:

PSA Sample Format

MEMORANDUM FOR (Address PSAs to the Base CSO or Host Base Commander.)

FROM: (The servicing EI activity.)

SUBJECT: Project title, location, project designator. (SUSPENSE: DD/MM/YY)

1. Program Information:

a. Project Designator: (Use complete four element designator.)

b. Provide the purpose of the programmed facility or equipment. Insert summary of applicable part of programming document. State that it is an upward generated or downward directed requirement. For all downward directed requirements, add: PMD/work plan _____, dated _____, authorizes this project, Program Title: _____, USAF Precedence Rating: _____, FAD: _____. Allocation of base design, contracting and construction resources for this project consistent with the above FAD as implemented in AFI 16-301, *US Air Force Priority System for Resources Management*.

c. Authority for the site survey is tasking letter or message, C4 requirements document or BPID, then insert appropriate date.

d. USAF Precedence Rating: (Use only if upward generated requirement).

e. Host Nation Approval and Connection Approval: (if applicable).

2. Siting and Project Installation Data: **Attachment 1** of the PSA contains the siting and project installation data.

3. Civil Engineering Support Requirements: **Attachment 2** of PSA identifies the host civil engineering activity support requirements.

4. Communications and Information Systems Support Requirements: **Attachment 3** of the PSA identifies the host base support requirements.

5. Base Support Requirements:

a. The host base provides supply, local purchase, and construction services. The CSO should take no action to procure materiel items coded "C" unless specifically instructed to do so by the assigned EI activity.

b. Identify and manage material containing asbestos, polychlorinated biphenyl's (PCB), lead acid batteries, lead based paints, creosote treated telephone poles, hazardous material storage sites, and hazardous wastes storage sites as defined in OSHA Regulation (Standard - 29 Code of Federal Regulations [CFR]), Part 1910, *Occupational Safety and Health Standards*, OSHA Regulation (Standard - 29 CFR), Part 1926, *Safety and Health Regulation for Construction*, Air Force Joint Manual (AFJMAN) 23-209, *Storage and Handling of Hazardous Materials*, and AFPAM 32-7043, *Hazardous Waste Management Guide*.

c. The host base, project site owner, CSO or responsible agency makes sure the proposed work site undergoes an environmental assessment with special attention to asbestos containing material, PCBs in transformers, capacitors, buried or stored hazardous wastes, lead acid battery banks and systems in close proximity to or use hazardous material to include fuels. Complete the environmental assessment with data available before any type of demolition, removal, and construction antenna, tower, or equipment upgrades proceed. Provide project engineers data on any and all hazardous material or hazardous wastes through the PSA.

d. The CSO makes sure the host base verifies duct availability, condition, and usability.

e. The CSO gets appropriate permits for entering confined spaces and controlled areas for the EI team. Obtains logistics support, consisting of technical data, spares, training, equipment, maintenance, and technical assistance through local base resources, the host command, or the equipment manufacturer. The EI activity assists the CSO with the logistics support with specifications for the applicable commer-

cial-off-the-shelf (COTS) equipment and vendors. **NOTE:** Accomplish these actions by the installation start date (ISD). The EI activity provides: Vendor: (Name, address, phone, and point of contact; Equipment Items: (Part number, model number, versions, and quantity); and Technical Support Information: (Part repair and replacement, technical support numbers, POC and cost).

6. Implementation Schedule Dates.

a. The CSO coordinates the anticipated allied support completion (ASC) date for support covered in **Attachment 2** and **Attachment 3** with the EI implementation manager. The CSO should not delay their concurrence with the support identified in the PSA based on the ASC date. PSA concurrence is based on the capability of the host base to support requirements identified in **Attachment 2** and **Attachment 3**, not when the support requirements can be done. If the projected ASC date is changed, the CSO notifies the EI implementation manager and user. Implementation milestones are adjusted to reflect the new ASC date.

7. Funding: The host base or command funds for program implementation.

8. PSA Processing:

a. The CSO makes sure the EI implementation manager receives the PSA concurrence. Process the PSA and provide concurrence as defined in paragraph 8b within 30 calendar days. If you cannot meet the schedule, the CSO provides the EI activity and all distribution addresses the following information:

(1) PSA identification.

(2) Reasons for delay.

(3) Estimated date you send the PSA endorsement. No engineering action is finalized until the supporting EI activity has the endorsed PSA. **NOTE:** In all cases, a draft PSA is left on site to expedite the PSA concurrence process. A formal PSA is sent and requires concurrence according to paragraph 8a. Additionally, on occasion, the EI engineering activity may accomplish on-site PSA concurrences for upward generated requirements with limited host base support. The need for on site concurrence is a joint engineer and CSO decision. On-site concurrence reduces implementation cycle time by 1 to 3 months.

b. PSA concurrence contains the following:

(1) Concurrence with the equipment or facility siting.

(2) Concurrence with all supporting requirements, service, and ASC date.

(3) Support project request number or BCE work order number and date submitted with a brief description and title of project.

(4) Installation personnel security clearance requirements.

(5) A statement whether there are any contractual obligations that may involve penalties, associated with the anticipated implementation schedule dates for this project.

(6) EMSEC requirements, if applicable, according to AFI 33-203, *Emission Security*, and other current Air Force guidance.

(7) This paragraph contains special requirements deemed necessary by the host base. For example, continental United States (CONUS) based EI personnel are not all chemical warfare defense (CWD) trained and do not routinely carry CWD equipment on installation projects due to additional baggage and costs. If, based on the threat, the team members require CWD equipment and training, the CSO notifies

the EI implementation activity at the earliest date. If the threat changes during the preparation phase for this project, notify the EI implementation manager to make adjustments.

(8) Accomplish an asbestos survey certification according to AFI 32-1052, *Facility Asbestos Management*.

(Project Engineer Signature Element)

(Office Section or Branch name)

Attachments:

1. Siting and Project Installation Data
2. Civil Engineering Support Requirements
3. C4 Systems Support Requirements
4. Drawing List with Drawings

cc:

Host Base Communications and Information Systems Project Management Activity

Host Base Civil Engineer

MAJCOM Civil Engineer

Active duty project engineering function (For ANG engineered projects only)

MAJCOM/SC Focal Point

MAJCOM EMSEC office (if EMSEC considerations are involved)

Other addresses as appropriate

NOTE: Similar support documents may be used by other than government implementing activities.

Attachment 7

PROJECT MANAGEMENT TASKS

A7.1. Self-Help Projects. A base can help itself by initiating and managing a project through to completion without directly involving the MAJCOM. Self-help installations may save time and money; however, use extreme caution in developing self-help projects to ensure that they are architecturally compatible and cost-effective. Before starting a project, ensure business process reengineering, an analysis of alternatives, and a cost-benefit analysis with projected return on investment is, to the extent possible, accomplished. Also, ensure that IT systems that are neither Air Force nor MAJCOM-wide but are mission critical or mission essential are registered in the appropriate IT systems registration database, before expending funds. Also make sure to take into account how self-help projects will affect manpower, money, and material resources for the O&M of the communications and information system. The base must coordinate with the STEM-B to avoid duplication of effort or systems integration problems. Follow local or MAJCOM procedures in documenting the project. Identify the project manager, project participants, source of funds, and authority for the project. Document and identify all tasks needed for project development and assign specific responsibilities for carrying out each task.

A7.2. Request for Service (RFS). Submit an RFS to get communications connectivity to support the project. Use an RFS to get leased or government-owned circuits or paths. Submit an RFS to the MAJCOM, allowing sufficient lead time before the required service date, if the project requires connectivity. See DISAC 310-130-1, *Submission of Telecommunications Service Request*, for more information on lead times, which range from 23 to 475 days.

A7.3. Logistics Support. The base communications and information systems planner must address logistics support needs before accepting new or upgraded communications and information systems or equipment. Make sure you know what supply support, special equipment and tools, technical data, appropriate training, and training support the project requires.

A7.4. Maintaining Project Folders. Project folders contain all the documents that constitute a formal communications and information systems project. Review these project folders periodically and keep them active until eliminating all installation exceptions. Transfer the project file to the CSIR file after installation certification. Purge information that is not of historical value and maintain according to AFI 37-138, *Records Disposition-Procedures and Responsibilities* (will convert to AFMAN 33-322V3) and AFMAN 37-139 (will convert to AFMAN 33-322V4).

A7.5. Communications and Information Systems Installation Records (CSIR). The CSIR manager maintains CSIRs at base level and establishes and maintains a master CSIR file for communications and information systems or facilities. The manager makes sure the CSIRs are reviewed annually, annotates drawings for correction, and sends them to the Communications and Information EDSC, 38 EIG/TS, 4064 Hilltop Road, Suite 149, Tinker AFB OK 73145-2713. The CSIR manager also notifies the servicing EI activity of major self-help installations that affect CSIR drawings or the status of future engineering efforts. On completion of the project, the manager submits revised as-built or as-installed drawings to the communications and information EDSC. See AFI 21-404 for more information.

A7.6. Project Support Agreement (PSA). The PSA formally documents communications and information systems requirements and approval for base support. Notify the project manager of any changes that affect the local support. Coordinate PSAs with the communications and information user and all tasked agencies. Make sure all PSAs document the equipment to be installed, sites or locations agreed on, supporting construction, services required; and operational, technical, or other constraints affecting the communications and information installation. Resolve any disagreements and consolidate any concerns in the PSA endorsement. The PSA for some upward generated requirements with limited host support may be concurred on site, though this is a joint EI engineering activity and CSO decision. Provide an interim reply to the engineering activity if you need extra time to complete the endorsement. The appropriate authority endorses the PSA and returns it to the originating activity. Document follow-ups with affected agencies in appropriate sections of the project folders. These follow-ups are essential since PSAs may be published, coordinated, and signed several years before the required support dates. Consider using locally developed PSAs when implementing requirements without EI assistance.

A7.7. Project Package. This package documents and translates a funded and approved communications and information systems requirement into the engineering, supply, and installation data necessary to establish or change a communications and information systems capability. Review project packages with all affected agencies to identify potential problems. Resolve all questions and comments with the STEM-B and project engineer before the installation team arrives.

A7.8. Support Construction. Support construction verification is one of the most important milestones in a project. Conduct an itemized verification of every support construction item listed in the PSA/support document. Base communications and information systems planners must personally verify the construction status with the civil engineering project monitor and should physically visit the job site with the communications project monitor to ensure completion of construction.

A7.9. Receiving and Storing Project Materiel. Early project/program planning is extremely important to ensure that project materiel is received when needed and proper storage is provided. The project/program manager needs to ensure that on base or contracted off-base storage space is available before shipment of project materiel. Support agreements between the communications and information systems unit and other base functional areas (base supply, civil engineering, etc.) are suggested for storage of project materiel on a temporary or permanent basis. "Just-in-time" delivery of materiel is another option.

A7.10. Systems Installations. Line up all necessary site support through appropriate base agencies before the installation team arrives. Provide installation status reports to base staff functions as required. Send all problems encountered during installation to base communications and information systems planners for resolution.

A7.11. Work Stoppage. If the installation team must stop work and depart, the installation team chief inventories, rebrates, and secures all uninstalled project materiel. The team chief, the base CSO, and the user sign appropriate documents to show custodianship, project status, equipment and project materiel responsibility, and the projected date when installation will restart.

A7.12. Civil Engineer Work Request Management. The communications and information systems planner processes requests for BCE support, attends facility utilization board working groups and work request review meetings, and maintains the status of all communications and information project work

requests. They also help or advise communications and information unit personnel on proper methods of getting BCE support. Consider civil engineering work classification and how to fund civil engineering work when managing civil engineering work requests.

A7.13. Civil Engineering Work Classification. Get allied support for a project through civil engineering. The base-level communications and information systems planner must stay aware of the categories the civil engineering community uses to classify its work. Coordinate funding for civil engineering allied support with the civil engineer. See AFI 32-1001, AFI 32-1021, and AFI 32-1032, *Planning and Programming Appropriated Funded Maintenance, Repair, and Construction Projects*.

A7.13.1. Maintenance (Appropriation 3400, Element of Expense Identification Code (EEIC) 521). Maintenance refers to the day-to-day work required to preserve real property facilities and prevent premature failure or wearing out of systems components. It includes work to prevent and arrest component deterioration, and also includes work required to restore components that have deteriorated, but which have not completely failed or exceeded their economic life. Real property includes fixtures, equipment, and other items that are part of the structure or building.

A7.13.2. Repair (Appropriation 3400, EEIC 522). Repair is that work required for any facility (i.e., building, utility system, or other real property infrastructure, or facility component) to restore its safe, effective, and economical support of assigned missions and organizations. See AFI 32-1032 for further information.

A7.13.3. Construction (Appropriation 3400 or 3300). Construction is a single undertaking for construction of one or more real property facilities and includes new construction, upgrade, major alteration, land acquisition, and necessary equipment for a specific purpose to produce a complete and usable facility. Classify construction work as minor or major as follows:

A7.13.3.1. Minor construction (EEIC 529). 10 United States Code 2805, *Military Construction*, authorizes minor construction projects, and military construction projects for a single undertaking that have an approved cost equal or less than \$1.5M. O&M appropriations authorize funds for minor construction projects costing \$300,000 or less. See AFI 32-1032 for the types of minor construction projects. Each MAJCOM budgets for these funds on a yearly basis.

A7.13.3.2. Unspecified minor construction work (Appropriation 3300/P-341). Unspecified minor construction is work with a funded cost between \$300,000 and \$1.5M. The requirement is unforeseen and of such an urgent nature that it cannot wait for the next MCP. HQ USAF/CEC funds unspecified minor construction work (line item P341) to the using MAJCOM. These funds are very limited and allocated by project from HQ USAF/ILE based on their latest P-341 project priority listing. See AFI 32-1021 for more information.

A7.13.3.3. Major construction work (Appropriation 3300/P-321 or P-331 if overseas). The MCP provides major facility construction on Air Force installations. It includes construction projects for all types of buildings, airfield pavements, and utility systems costing \$300,000 or more. It can also include repair projects costing \$300,000 or more, but normally repair projects are accomplished from O&M or Defense Business Operation Fund. Military construction includes any construction, development, conversion, or extension of any kind carried out with respect to a military installation. It includes all construction work necessary to produce a complete and usable facility or a complete and usable improvement to an existing facility. A base submits projects by individual project line item, through its MAJCOM, to HQ USAF and the Office of the Secretary of

Defense, for congressional authorization and appropriation in the MILCON program. Additionally, a 6-year MILCON program is developed for the POM. See AFI 32-1021 for more information.

A7.13.4. Work Done for Others. The BCE may perform other types of work not directly related to real property maintenance, repair, or construction and does not fit the work categories described above. Common examples include burying communications cables, work on nonreal property equipment (i.e., equipment listed on the Equipment Authorization Inventory Data account, or installing raised flooring or air conditioning for computer equipment [see AFI 65-601V1]). Use EEIC 592 for this work. This type of work is not subject to the limitations placed on repair or minor construction.

Attachment 8

PROJECT MANAGEMENT FUNDAMENTALS

A8.1. Project Roles and Responsibilities.

A8.1.1. The life cycle of every project consists of three distinct phases: conception; execution; and completion.

A8.1.2. There are four basic functions of project management: planning; organizing; leading; and controlling.

A8.1.3. All project managers require communicative, administrative, and negotiating skills.

A8.1.4. Each project requires a team of individuals who play a part-time or full-time role. The team consists of a project manager and a group of specialists assigned to the project. There are managerial and nonmanagerial staff members as well as those with technical or nontechnical backgrounds.

A8.2. Project Variables.

A8.2.1. The scope of a project should be defined by developing a scope statement, management plan, and a change control system.

A8.2.2. Project time management is a natural extension of scope management. It is imperative that you schedule activities to make the most efficient use of the time available.

A8.2.3. Another variable in project management is risk management. A project risk is a potential source of deviation from the project plan. These risks can have either a negative or positive outcome on the project. Negative risks are considered threats, while positive risks can be opportunities.

A8.2.4. Quality is everything in your project that has to do with the ability of the deliverables to satisfy stated needs. And, these needs usually originate with the customer. Project quality management is an ongoing process of product monitoring and improvement. It is a facet of every process of your project and encompasses three concepts: planning; assurance; and control.

A8.2.5. Resources are any items or people you need to complete your project. It refers to human resources, equipment, material, and funds. Resource management involves planning and control.

A8.3. Project Processes. Project management processes are overlapping activities that occur at varying levels of intensity throughout the life of a project. You should look at the subdivided projects and define the specific activities that must be performed to produce the deliverables.

A8.3.1. Planning. The development of a project plan ties the other planning processes together.

A8.3.2. Controlling. The performance of your project must be measured regularly to identify any variations from the plan. It is the project manager's responsibility to monitor and control the progress of the project. Adjustments are made to the plan by repeating the appropriate planning process when you notice significant variances. Each project should have a built-in controlling mechanism in the plan to cope with any unexpected developments.

A8.3.3. Reporting. This process can be anything from verbal face-to-face discussions to formal slide-show presentations to written reports. The important factor is how you as a project manager

communicates to others involved. It is the job of the project manager to collect and distribute project performance information.

A8.3.4. Concluding. When you start a project, you should set your sights on a finishing date. The life of a project is finite, so you have to define a point at which the project reaches its conclusion and make reports to the customer summarizing what has been accomplished. The customer's acceptance signifies the conclusion of the project.

A8.4. Project Management Tools and Training.

A8.4.1. There are many project management software products available to aid with planning and controlling project costs and schedules.

A8.4.2. For more detailed information and training on project management concepts go to the Air Force Computer Based Training (CBT) site at <http://www.afca.scott.af.mil/cbt>.

Attachment 9

BASE-LEVEL MOBILITY/DEPLOYMENT PLANNING

A9.1. General. The base CSO is the POC for the communications and information aspects of all plans that affect the wing. The communications and information systems planner assists the CSO with the day-to-day duties associated with plans management and support as the Unit Deployment Manager (UDM). The planner is the liaison between the communications activity, and the Installation Mobility Officer (IMO) or Installation Deployment Officer (IDO). The planner represents the communications unit on all plans related activities, makes sure plans are evaluated, and coordinates all taskings to make sure all mobility planning is complete. The planner must understand the types and purposes of plans, the Status of Resources and Training Systems (SORTS), and all personnel and equipment requirements. Accomplish duties according to AFMANs, AFIs and MAJCOM and local guidance.

A9.2. Plans Evaluation Management and Preparation Duties. Proper plan evaluation makes sure relevant portions of the communications unit make a comprehensive review of each plan that tasks wing activities. It also makes sure the required equipment and personnel are identified and ultimately available to support the taskings. Key considerations and tasks are:

A9.2.1. Coordinate all unit taskings within the communications unit to assess the impact and determine supportability. A knowledge of the wing and units' missions is helpful. Assign a unit OPR (and possible OCRs) for the plan who evaluate the requested resources, determine required resources, and identify resource availability. Make sure the review considers taskings as a result of other plans. Determine the need for additional plans annexes.

A9.2.2. Determine and differentiate between reportable and nonreportable taskings. Reportable taskings result from UTC requirements listed in DOC statements. Nonreportable taskings usually result from disaster preparedness, continuity of operations, and programming plans among other things.

A9.2.3. Proper administration of plans results in effective and timely response to user requirements. Key tasks include: receive, log, and safeguard all incoming plans; distribute plans to unit OPRs and OCRs; post, distribute and analyze changes to active plans; integrate the plans into the office file plan according to AFI 37-138 (will convert to AFMAN 33-322V3) and AFMAN 37-139 (will convert to AFMAN 33-322V4); maintain the plans library; review all plans indexes for currency; maintain the unit master plans file; and create, update, and distribute the unit plans index.

A9.2.4. As the communications and information focal point for all exercise plans there are numerous responsibilities which include: participate or ensure the unit is represented in Master Scenario Events Listing (MSEL) development and implementation; attend planning and post-exercise meetings; review the communications squadron's responses to exercises, determine shortfalls, develop shortfall solutions, and implement solutions; and brief the communications unit commander and staff.

A9.3. Unit Deployment Manager Personnel Duties. Many tasks are required to make sure personnel are available to support the plans. (**NOTE:** In most Air Force Reserve deployable units the UDM is known as the Unit Mobility NCO/Officer.) Some of these tasks include:

A9.3.1. Accurate identification of mobility tasked personnel and timely notification via accurate recall rosters.

A9.3.2. Process personnel according to the guidance in the applicable operations plan.

A9.3.3. Develop a checklist of personnel processing requirements which include: mobility readiness folder for each person; ensure proper security clearance and immunizations (with shot record); current passport, proper mobility bag, medical and training folders (when deployed beyond 30 days); DD Form 2, **Armed Forces of the United States--Geneva Conventions Identification Card**; dog tags and chains; AF Form 1141, **Current Leave and Earnings Statement**; government driver's license; AF Form 1199A-D, **USAF Restricted Area Badge**, two pairs of eyeglasses, a 60-day supply of medications, spectacle inserts for the gas mask, AF Form 522, **USAF Ground Weapons Training Data**, wills, powers of attorney and financial affairs in order.

A9.3.4. Coordinate transportation requirements for the deployed personnel.

A9.3.5. Ensure the UTC tasking can be satisfied by available authorizations in the unit manpower document (UMD). The UTC reflected in the UMD should match the MANFOR requirements, all coded UMD positions must be reflected in the Unit Personnel Management Roster (UPMR), and mobility ready personnel must fill all coded UPMR positions.

A9.4. Unit Deployment Manager Training Duties. The communications and information systems planner and deployable unit personnel must be properly trained. The IMO or IDO and various wing activities provide training. The planner ensures, with the assistance of unit supervisory personnel, that deployable unit personnel are trained. The planner will accomplish the following to ensure their training and that of deployable unit personnel:

A9.4.1. Be familiar with MANFOR and LOGDET products.

A9.4.2. Attain training to perform SORTS reporting.

A9.4.3. Advise the IDO or IMO when training deficiencies occur and provide status reports as requested.

A9.4.4. Ensure formal mobility training is documented via AF Form 1098, **Special Task Certification and Recurring Training**, or Core Automated Maintenance System (CAMS).

A9.4.5. Conduct initial and follow-on briefings to the CSO and IDO or IMO regarding personnel taskings in the TPFDD, TPFDL, and UTC, and deployment responsibilities as required.

A9.4.6. Ensure deployable unit personnel are trained in the following areas (as required): cardiopulmonary resuscitation; self-aid and buddy care; combat skills familiarization, law of armed conflict, personal and family readiness, chemical warfare; hazardous material certification; explosive ordnance reconnaissance, mobility bag inspection procedures; equipment operation, maintenance, and preventive maintenance inspections; Battle or Contingency Support Staff tasks; cargo marking, packing, palletizing, and inspection procedures; generator and vehicle operations; and cargo courier duties.

A9.5. Unit Deployment Manager Equipment Readiness Duties. On-hand equipment must be 80 percent serviceable and ready to deploy. The communications and information systems planner takes several actions to ensure equipment readiness. These include: ensure operators develop schedules to test deployable equipment in an operational environment; ensure periodic checks of equipment in storage; and monitor quantities of on-site equipment to ensure mobility requirements can be met. Periodically advise the CSO, the unit staff and IMO or IDO. Report C-level data as required.

A9.6. Unit Deployment Manager Equipment and Supply Duties. On-hand deployable equipment must match authorized deployable equipment and deployable personnel and equipment must have the

necessary supplies and other logistics support. Of particular concern are resource management, mobility bags, cargo management, hazardous material, weapons and ammunition, chemical warfare equipment, and tools.

A9.6.1. Mobility Bags. Ensure mobility bags are available for all deployable personnel. Make sure: A, B, and C mobility bags are built; C mobility bags are inspected for chemical gear expiration and serviceability on a regular basis; document the issue of mobility bags in readiness folders; and maintain 10 percent more bags than deployment commitments, to support alternates.

A9.6.2. Cargo Movement. All cargo requirements are met by assigning cargo increment monitors; verifying all pallets are complete; coordinating weapons, ammunition, and hazardous material shipments with wing logistics activity; selecting personnel to prepare pallets; making sure pallets are delivered to the marshaling area; preparing cargo shipping paperwork; and making sure the cargo is packed and marked. Additionally, make sure cargo couriers are appointed in writing and identified in the Mobility Requirements Resource Roster (MRRR), and shipping containers are on-hand and serviceable.

A9.6.3. Hazardous Material. Take special care when dealing with hazardous material. Make sure semiannual inspections of deployable equipment and material are conducted to identify hazardous material. Make sure hazardous material is properly marked and identified prior to shipment, and make sure trained individuals are identified in writing to certify hazardous material for shipment.

A9.6.4. Resource Management. To make sure of resource management, the communications and information planner must:

A9.6.4.1. Know the location of all equipment, make sure technical data is available, know equipment assembly time, and make sure all logistics issues are addressed.

A9.6.4.2. Keep the CSO, the unit staff, and the IMO or IDO informed of the status of deployable equipment support status.

A9.6.4.3. Prepare and manage budget requirements for mobility equipment and supplies, and make sure items are replenished and accounted for.

A9.6.4.4. Review the LOGDET to match UTCs with equipment requirements and make sure supplies for each UTC are available.

A9.6.5. Chemical Warfare Equipment. Store, account for, and provide chemical warfare equipment to deployment personnel. Storage and accountability may be delegated.

A9.6.6. Weapons and Ammunition. Obtain sufficient weapons and ammunition to support mobility requirements and make sure of appropriate storage and accountability.

A9.6.7. Tools. Make sure individual, professional, and composite tools kits are budgeted for, acquired, provided to personnel, maintained and deployed.